LEADERSHIP SELF-EFFICACY IN SMALL GROUPS:

VALIDATION OF A SELF-REPORT MEASURE

A Dissertation

by

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ABSTRACT

To remain competitive and to deal successfully with the ever-increasing complexities, contemporary organizations are increasingly relying on small work groups and teams to accomplish their goals. The exponential increase of team research appearing in the *Journal of Applied Psychology* in the past decade is evidence of this trend. Thus, researchers have called for studies that explore the issue of group context, contingencies, and boundary conditions to gain a comprehensive understanding of what makes groups function optimally. The present study responds to this call by emphasizing group size as a context variable that contributes to perceptions of leadership self-efficacy and, ultimately, leadership outcomes. Specifically, the objective of the present study was to validate a new measure of small group leadership self-efficacy by building largely on social cognitive theory.

Data were obtained from 1,424 participants enrolled in five unique leadership programs. Although some validation hypotheses did not receive support, the overall results show some promise for the measure as partial support was found for the proposed construct- and criterion-related validities. Because scale validation is not a single event, future research should pursue additional validation avenues with the objective of further building the nomological network of the small group leadership self-efficacy construct, thereby, contributing to organizational research. The implications of the results and future research directions are discussed.

DEDICATION

This is for you mum. May this put a smile on your face during this trying time.

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CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

Researchers and practitioners are fascinated with leadership because not only do employees want to develop the capacity to lead in order to reach their full potential, but organizations also recognize that effective leaders can enhance the performance of work groups and are critical to the accomplishment of organizational goals. Hence, it is essential to examine the developmental components that great leadership is founded on. A review of leadership effectiveness highlighted the centrality of self-efficacy to leadership (McCormick, Tanguma, & López-Forment, 2002). Self-efficacy, which is one's belief in one's capacity to gather the resources needed to perform in a particular situation (Bandura, 1997), has received considerable attention among leadership researchers. This attention is fitting because self-efficacy impacts behavior by influencing its initiation, intensity, and persistence (Bandura, 1986).

Leadership self-efficacy refers to "one's self-perceived capability to perform the cognitive and behavioral functions necessary to regulate group process in relation to goal achievement" (Anderson, Krajewski, Goffin, & Jackson, 2008, p. 30). It captures an individual's beliefs that s/he can perform sustained leadership activities that relate to planning, communicating, giving direction, coordinating tasks, and inspiring others. In spite of the numerous studies that have applied leadership self-efficacy to college and K-12 leadership, management in organizations, organizational change, and sports (e.g., Anderson et al., 2008; Moen & Federici, 2012; Paglis & Green, 2002; Williams, 2009),

the studies fail to account for the impact of group size on leadership self-efficacy perceptions. Thus, leadership self-efficacy within small groups (e.g., action teams, informal work groups, and research teams) has received no attention in the leadership literature in spite of the apparent need for it.

A focus on leadership self-efficacy within small groups is warranted not only because of the pervasive blurring of organizational boundaries and the proliferation of work groups or teams in modern organizations, but also because self-efficacy itself is task or role specific (Bandura, 1997). Thus, when using self-efficacy in organizational research, the specific performance context being studied should be specified. Furthermore, leadership is defined by the context in which it is experienced and the roles and leadership behaviors vary from one context to another (Graça & Passos, 2015; Liden & Antonakis, 2009).

Consequently, the present study seeks to empirically examine the validity of a "small group" leadership self-efficacy construct and measure to the scientific and applied field. To further the understanding of, and ability to predict leadership behavior, the present study will examine whether small group leadership self-efficacy scores demonstrate construct-related, criterion-related, and incremental validity. This is a best practice of measure development as validation provides the foundation to facilitate future research on the construct (Wright, Quick, Hannah, & Hargrove, 2017). Furthermore, it is anticipated that the results of the present study will have practical implications for organizations as their leaders increasingly deal with wide spans of

control due to corporate restructuring or downsizing even when responsible for complex tasks.

Leadership Self-Efficacy in Small Groups: Theoretical Background

Like many organizational constructs, leadership has no widely accepted definition. Researchers have attempted to integrate the varying definitions of leadership to no avail and leadership remains a contested concept (e.g., Winston & Patterson, 2006). Although a comprehensive discussion and resolution of these definitions is beyond the scope of the present study, Northouse' (2016) leadership definition, that leadership is the "process whereby an individual influences a group of individuals to achieve a common goal" (p. 6), was adopted for the purposes of the present study because it accommodates the common themes in most definitions (e.g., the group setting, social influence). It is apparent from this definition that a leader's influence does not exist outside of a group. Hence, to comprehend the leadership process and human behavior, one should also consider the group within which the leader is embedded (Levine & Moreland, 2008).

That the present study places emphasis on small groups raises the question of the upper limit of a group for it to remain *small*. Although a group is referred to as small when its individual members are aware of and are able to communicate directly with all other group members (Cooley, 1983), the small group literature does not address the maximum member limit of a small group. This is appropriate because an assertion of an upper limit may be misleading when the same number is applied to different leadership contexts. Although organization leaders use experience-driven rules to determine the

maximum number of a small work group (e.g., Jeff Bezos of Amazon uses the "2 Pizza rule" which translates to eight members), the maximum size of a group for it to be referred to as small is determined by, for example, the group task or goal, the length of time it has existed, the characteristics of its environment, and its membership (Kozlowski & Bell, 2003; Verba, 1961).

Microbusinesses, organizations with about nine or fewer employees, are the most common types of organizations in the U.S. (Brawley & Pury, 2017) and are an example a small group. Thus, that most organizational goals are achieved through small numbers of workers in groups or teams (Huse & Cummings, 1985) cannot be overemphasized. However, different groups have varied goals and engage in different forms of relationships. This calls for different types of leadership because it is easier or more challenging to exert influence in some groups than it is in others as certain circumstances in some groups facilitate or inhibit the leader's exercise of influence (Fiedler, 2008). Based on this rationale, the theoretical perspectives that justify the introduction and validation of a small group leadership self-efficacy construct and measure is explicated in the section that follows.

Social Cognitive Theory

Self-efficacy, drawn from social cognitive theory, is a psychological mechanism. It refers to one's own judgment of one's own ability to garner the cognitive and behavioral resources needed to successfully perform a specific task (Bandura, 1997). The development of high self-efficacy allows an individual to learn the strategies essential for dealing with challenges and achieving difficult goals. Self-efficacy is the

outcome of a gradual accrual of complex skills through experience (Bandura, 1986). A cognitive appraisal of these complex skills and capabilities subsequently informs the choices that individuals make and the effort they expend. Bandura (1986) suggests that individuals have more incentive to act and are motivated when they are confident that they can produce desired outcomes. In fact, any motivating factor is rooted in the core belief that one has the power to produce a desired change or outcome.

Social cognitive theory is illustrative of how individuals are shaped by a triadic reciprocity, that is, the interrelatedness of personal cognitive factors, the external environment, and behavior (Bandura, 1986). These three factors influence one other in a reciprocal manner. Behavior is determined by personal factors and environmental factors, which are in turn influenced by behaviors. An individual's reflective capacities affect his/her behaviors and the environment as it helps with exercising control over his/her thoughts, beliefs, and actions (Bandura, 1991). Social cognitive theory suggests that self-efficacy can affect employee performance through multiple self-regulatory mechanisms that include one's aspirations, choices, effort expenditure, perseverance, stress experienced, self-aiding or self-hindering thoughts, and resilience in the presence of difficulties and setbacks (Bandura, 1991).

According to social cognitive theory, employee behavior cannot be fully predicted without accounting for self-efficacy; it is self-efficacy that usually allows one to transfer learning to new situations and challenges (Bandura, 1986). Employees with a high level of specific self-efficacy have a tendency to engage in task-focused activities and persist longer which results in more mastery. Their mastery and the corrective

experiences gained in turn enhance self-efficacy (Bandura, 1977). Whereas those with low self-efficacy tend to engage in fewer task-focused activities and give up prematurely in light of adverse circumstances and uncertain outcomes. Their low mastery results in persistent low self-efficacy (Bandura, 1977).

Because self-efficacy is described as a task- and context-specific cognition, its assessment should be specific and should correspond directly to the context where the task would be performed (Bandura, 1977). In addition, self-efficacy expectations have been advocated to influence the choice of environment (Bandura, 1977), in this case the choice of leading a small or large group. One could expect that an employee with a low level of large group leadership self-efficacy may doubt his/her ability to be successful in a large group context due to the pressures and demands that may be imposed by the work environment whereas one with a high level of small group leadership self-efficacy in a small group context may sustain motivated efforts even when s/he encounters obstacles. As Bandura and Adams (1977) emphasized, behavior should not only be measured precisely in efficacy analysis but the measurement should also be tailored to the context being studied. Hence, it becomes appropriate to introduce a leadership self-efficacy construct that precisely captures the nuances of the leadership context.

Leader-Member Exchange Theory

Leader-member exchange (LMX) theory departs from popular leadership theories that emphasize the characteristics of a leader by prioritizing the relationships that exist between a leader and each member. It emphasizes the differential quality of relationships between a leader and each follower (Dansereau, Graen, & Haga, 1975).

LMX theory is predicated on the concept that leadership is more effective when leaders and group members are able to develop partnerships and access the many benefits such relationships bring (Graen & Uhl-Bien, 1995). The theory posits that the ideal is for a leader to develop unique *high exchange relationships* that are social in nature and are characterized by high levels of trust, liking, support, felt obligation, loyalty, and respect with as many members as is feasible. High exchange relationships extend beyond the employment contract as they aim to facilitate followers' motivation to perform optimally. These high exchange relationships have been reported to result in enhanced work performance and a host of follower outcomes including job satisfaction and well-being (Martin, Guillaume, Thomas, Lee, & Epitropaki, 2016).

There is reason to expect that group size makes a difference for the LMX processes (such as support and felt obligation). Because additional time is needed on the part of the leader to develop high exchange relationships with each group member, increasing work group size may limit LMX quality as the leader's effort to maintain high exchange relationships with increasing members become constrained. This converges with the tenets of social network theory that a leader's capacity to maintain a dense social network (characterized by interpersonal trust and strong ties with group members) may be limited when increasing member size results in weak leader-member ties (Mehra, Dixon, Brass, & Robertson, 2006).

Although the pursuit of high exchange relationships with all followers irrespective of group size is desirable, the time and regular social exchange that such relationships require constrains its practicality in an organizational setting. This

constraint may result in a leader maintaining a high-quality dyadic relationship with only select members while s/he is only able to maintain low-quality relationships with the remaining followers. The difference in the LMX quality the leader maintains across members has been found to result in counterproductive performance whereby members in low LMX relationships address their perceived unfair treatment through counterproductive behaviors (Martin et al., 2016). In addition, organizational constraints and personal biases also impede leaders' attempts to develop high exchange relationships with all followers (Liden, Erdogan, Wayne, & Sparrowe, 2006). This is further confirmed by studies that found that with increasing group size, leaders become more autocratic, they display less considerate behaviors, LMX quality decreases, the avenues for leader interactions with group members become limited, which ultimately results in decreases in group task performance (e.g., Ford, 1981; Green, Anderson, & Shivers, 1996; Li et al., 2015; Yukl, 2013).

A high quality LMX within a work group results in group goals being achieved because the leader spends more time in giving the group members the assistance and resources needed (Graen & Uhl-Bien, 1995). Thus, a leader is more likely to select a group that facilitates high quality LMX over one that does not in order to increase the likelihood of being an effective leader. In a similar vein, because group size makes a difference for LMX, an individual who may be efficacious about his/her leadership ability in a small group may consider leading a large group more challenging and feel less confident about his/her ability to be effective in that group. However, it is important

to recognize that yet another individual may select to exert influence in, and be comfortable with, a small or large group.

Fiedler's Contingency Theory of Leadership Effectiveness

Fiedler's (1967) contingency model, possibly the earliest situational theory of leadership, made a significant contribution to literature by emphasizing that leadership is exhibited within a context. The model proposed that leadership effectiveness is dependent on the context and that certain aspects of the situation can affect leadership effectiveness (Miner, 2005). Simply put, effectiveness of a leader is contingent not just on the individual characteristics, but also on situational favorableness, that is the degree to which a situation provides the leader with influence over the activities of the group by permitting the exhibition of the leadership style that is most appropriate to that situation (Fiedler, 1964).

Although the situational variables typically examined in Fiedler's contingency model are task structure, position power, and leader-member relations, the present study extends the ideas of Fiedler by proposing that group size determines situational favorableness and, therefore, the effectiveness of the leader. A group size that is favorable to an individual leader allows him/her to predict the outcomes of his/her leadership because situational favorableness enables a leader to predict the consequences of action (Nebeker, 1975). For example, if an individual senses that s/he would have little or no situational control in a large group context and is uncertain about the outcome of his/her decisions or whether desired group goals would be achieved, it may result in stress and anxiety (Fiedler, 1978). According to Fiedler, "a high degree of control and

influence implies that the leader has correspondingly high certainty that his decisions and actions will have predictable results, and that they will achieve the desired goals and gratify the leader's needs in the situation" (Fiedler, 1978, p. 62). Individuals are able to recognize leadership contexts that best fit their capabilities (Fiedler, 1978) and are likely to be efficacious for such contexts. By the same token, leadership self-efficacy should capture the context under consideration.

Role Theory: Leadership as a Role

Leadership is a role (Sherif & Sherif, 1956). Katz and Kahn (1978) defined roles as the "standardized patterns of behavior required of all persons playing a part in a given functional relationship, regardless of personal wishes or interpersonal obligations irrelevant to the functional relationship" (p. 43). Roles are social cues and shared expectations that guide an individual's behaviors in a given context (Biddle, 1986; Ilgen & Hollenbeck, 1991). Although a role contains tasks that make up a position or job, roles often consist of behaviors that are not listed on the job description and have less precise boundaries as they consist of both formal and informal tasks (Ilgen & Hollenbeck, 1991). These less precise boundaries for behavior often typifies a leadership role. In addition to established roles, leaders often take up what Ilgen and Hollenbeck (1991) called *emergent* roles which develop through interactions within and outside the leader's group or unit. Roles are a reflection of the context or specific conditions under which it exists (Winkler, 2010); hence, as one would expect the role of a department head to vary across departments within and between organizations, for example, it is also

rational to surmise that the role of a leader across different, and similar, group sizes would be variable.

Role theory is often used to explain the predictors of leadership behavior as it posits that behavior is driven by roles (Biddle, 1979). It suggests that individuals behave in different ways depending on their identities, the situation, and expectations (Biddle, 1986). Because one needs to take up a role in order to engage in it (Mead, 1934), it is only logical that one would do a realistic evaluation of whether or not one is capable of meeting the role expectations that are both received by relevant others or that one perceives. The perception of role expectations may be influenced not only by the person-job fit but also by individual characteristics such as leadership self-efficacy. Thus, the lack of congruity between the role expectations and one's leadership self-efficacy may account for lack of role enactment. Specifically, if one perceives oneself as being unable to take up a specific leadership role, as a result of the group size for example, one may avoid such a role to minimize role conflict, uncertainty, and stress resulting from one's inability to accomplish all role demands (Katz & Kahn, 1978).

Group Size as a Leadership Context

Organizational phenomena do not exist in a vacuum and as such the context or boundary conditions within which a theory is expected to replicate should be defined (Graça & Passos, 2015). Context is a situational constraint that affects the occurrence and importance of behavior as well as the relationship between variables (Johns, 2006). Not only do individuals behave as the context demands, they actively pre-select contexts or environments they believe they could be instrumental in shaping (Schneider, 1987).

For instance, an individual who does not subscribe to the military organization's strict procedures and rules is more likely to select a flexible context where variations in individual behavior are welcome.

In leadership research, context is recognized as critical to leadership with theories such as the earlier discussed contingent leadership (Fiedler, 1967) that suggest that the effectiveness of the leader depends on the fit between leaders' style and context features. Context is co-defined with leadership and is a variable that interacts with leadership to influence effective leadership (Osborn, Uhl-Bien, Milosevic, 2014). Because context varies, it should be recognized in the description, explanation, and prediction of a leadership construct and its influence on the construct should be explored by researchers (Liden & Antonakis, 2009). Further, context may explain why there are variations in results across studies (Johns, 2006).

The importance of group size, a context feature, has been delineated by previous studies that sought to investigate the optimal group size as a component of group composition that supports effectiveness (e.g., Naber, McDonald, Asenuga, & Arthur, 2015). Such studies conclude that increases in group size results in a degradation in group process because as groups grow larger, coordination issues and motivation losses from a dispersion of responsibility occur (e.g., Lowry, Roberts, Romano, Cheney, & Hightower, 2006; Sheppard, 1993). This is similar to the "growing pain" point discussed in the economies of scale literature. Although economies of scale, in which production efficiencies are optimized by increasing the scale of production (O'Sullivan, 1993), was the main driver for mass production, mergers, and acquisitions, absolute

reductions of gains beyond certain thresholds have been found when an organization continues to increase in size (Katz & Rosen, 1994). That is, production costs outweigh the savings gained from greater scale when the threshold is exceeded.

One case in point is communication as a group process variable. A small group context typically allows for more interaction and communication whereas these opportunities decrease in a large group context where individual "airtime" and reciprocity among members is minimal, which would explain why, unlike the dean of a large college, the department head is expected to know the names of the faculty in his/her department. Devanshi Garg, the chief operating officer of the IT consulting firm Icreon Tech, also shares this concern. She related in a public press interview (Bradt, 2013) that as her team size grew, her internal communication with the team needed to be "more strategic". This resulted in her making additional effort to create events and opportunities for team members to do things together (e.g., running a marathon or going to a Broadway play) and get to know one another better so exchange of task-related ideas could flow easily. Figure 1 depicts how the lines of communication vary as group size increases. Thus, it is logical to surmise that variations in group size affect leader effectiveness.

Group size can thus be viewed as a context that moderates or determines the manifestation of behavior (Kozlowski & Bell, 2003). This is consistent with the span of control research in the management field which seeks to uncover an optimal span of control with the limited number of employees that one individual can successfully manage (Weber, 1947). Decades of span of control research recommend a narrow, rather

than a wide, span of control as it was found that managers are only able to supervise a small number of employees effectively (Davison, 2003; Gittell, 2001). Hence, narrow spans are small enough to allow managers to work closely with employees, yet wide enough to afford employee independence.

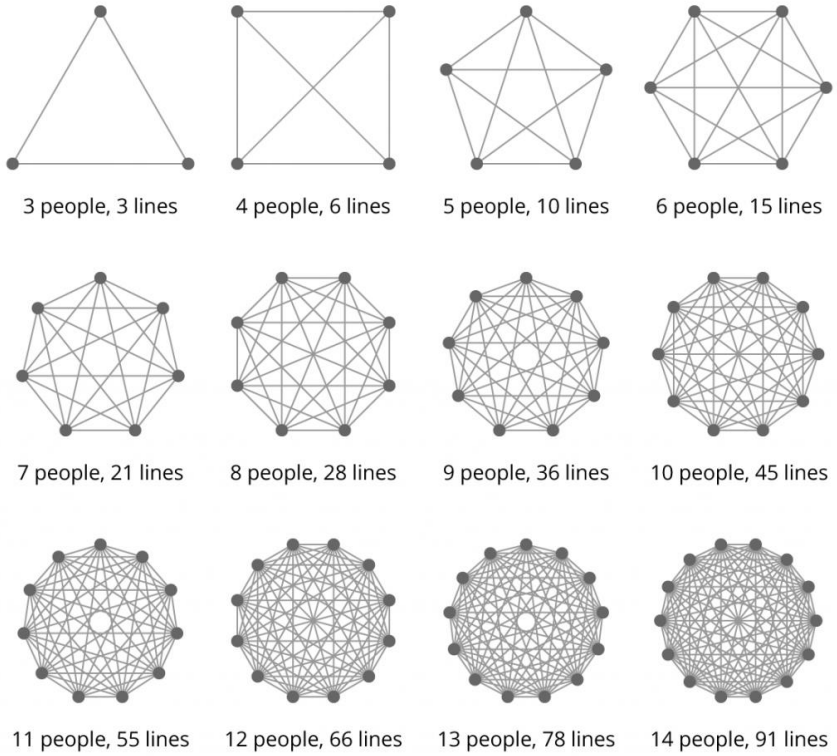

Figure 1. Lines of communication in a group (Reprinted from Olah, 2015).

Large group contexts create a number of unique challenges for leaders. For one, the leader experiences difficulties in coordinating members especially as members become less involved in the group (LePine & Dyne, 1998). Furthermore, leaders not only need to perfect essential leader skills (e.g., monitoring, planning, and

communication) but also need to perfect teamwork skills (Kozlowski & Bell, 2013). Teamwork, defined as "the procedural knowledge, proficiencies, skills, and attitudes required to organize and coordinate the efforts of group members" (Bertucci, Conte, Johnson, & Johnson, 2010, p. 258), tend to be more complex in a large group context (Bertucci et al., 2010). These differences attributable to group size are expected to have a direct impact on leadership self-efficacy in consonance with Steiner's model of group size and productivity (Steiner, 1972), and the information/decision making perspective (Williams & O'Reilly, 1998). Table 1 presents additional differences between small and large groups which suggests considerable consensus among researchers.

Table 1
Differences between Small and Large Group

Variable	**Explanation**	**Source**
Trustworthiness	Members of small groups are perceived as more trustworthy than large groups. Study participants have applied the "small = trustworthy" heuristic to guide their intentions to either approach or avoid a group.	La Macchia, Louis, & Hornsey, & Leonardelli (2016)
Cohesion and cooperation	Small groups are perceived as more cohesive and having more within group cooperation than the low cohesion and high inter-member competition that characterizes larger groups. The optimal distinctiveness theory also posits that because small groups are seen as cooperative and "optimally" sized, they likely meet the interdependence	Brewer (1991); De Cremer & Leonardelli (2003); Leonardelli & Loyd (2016); Messick & Liebrand (1995)

Table 1 Continued

Variable	Explanation	Source
	and identity (or distinctiveness) needs of individuals.	
Group development	Small groups typically reach higher stages of group development than large groups.	Wheelan (2009)
Communication and interaction	The amount of communication and interaction (termed teamwork quality) initiated by individual members decrease with large groups when compared to small groups.	Bradner, Mark, & Hertel (2005); Hoegl (2005); Wheelan (2009)
Satisfaction	Member satisfaction decreases as group size increases. Large group members have reported more inhibition and disagreements.	Slater (1958)
Diffusion of responsibility	Large groups experience more diffusion of responsibility than small groups.	Stroebe & Frey (1982)
Quality of group experience	Small groups enjoy a better quality of group experience (i.e., positive relationships that promote personal and professional development) while large group members have reported less support from other members.	Aubé, Rousseau, & Tremblay (2011); Mueller (2012)
Leadership	Large group leaders are more autocratic and display less considerate behaviors towards their followers. Members of large groups perceive more dependence on and conflict with their leader and report higher levels of LMX differentiation than small group members.	Hooper & Martin (2008); Wheelan (2009); Yukl (2013)
Group productivity	Members of large groups have reported their group as focusing less on the task and being less effective and productive.	Sharma & Ghosh (2007); Wheelan (2009)

Due to these differences, it is proposed that, like cross-cultural research, what is known about large groups might not translate to small groups. Because it has been argued that leadership varies as a function of group size (Alderfer & Klein, 1978), it is expected that the efficacy of leadership behaviors or styles would change as the group size changes. For instance, a laissez-faire leadership style may be effective in a small group whereas adopting it in a large group (whereby the leader has more members under his/her span of control) may result in chaos and setbacks. Moreover, an individual may perceive him/herself as lacking the skills needed for effective group functioning in a large group context, and yet, may feel more efficacious in a small group context. This is consistent with the tenets of social impact theory (Latané, 1981) that individuals may perceive a small group as easier to influence than a large group. Hence, this group size effect should be taken into consideration in the study leadership self-efficacy.

A perusal of the leadership literature indicates that context is not well represented in the extant research (Kozlowski, Mak, & Chao, 2016). Despite the theoretical acknowledgement that context is critical to groups and leadership, previous research on leadership self-efficacy does not highlight context features. The existing measures also are context free as there was no attention paid to context in the development of these measures. The present study emphasizes group size as a contextual variable that could either foster or hamper leader self-efficacy and, subsequently, leader effectiveness.

Overview and Summary of Asenuga (2012)

Asenuga (2012) conducted a study that conceptualized leadership self-efficacy within small groups. Specifically, the construct was labeled as small group leadership

self-efficacy and it was defined as "an individual's confidence in his/her ability to successfully assume a leadership role in a small group" (Asenuga, 2012, p. 3). In the substantive validity phase, a literature review of leadership, self-efficacy, leadership self-efficacy, and small groups was conducted to develop a clear understanding of the construct. Based on this review, a specific conceptualization of small group leadership self-efficacy was adopted and a measure to operationalize it was developed.

Specifically, the development of the small group leadership self-efficacy measure entailed an item development process that took several leadership self-efficacy studies and relevant theories into consideration (e.g., Anderson et al., 2008; Bobbio & Manganelli, 2009; McCormick et al., 2002; Paglis & Green, 2002) to establish clear links between items and their theoretical domain (Hinkin, 1995). This endeavor resulted in 101 items that were developed through a deductive approach and that consisted of the total set of efficacies that reflected a comprehensive representation of the construct. The items were fitted into one of five dimensions (context management; impression management; monitoring, diagnosing, and action-planning; relationship management; task management) that served as categories of self-efficacy beliefs about an individual's ability to carry out the functions of a small group leader.

Asenuga (2012) used two-wave undergraduate student data and independent judges who were graduate students to refine the measure from 101 items to 23 items. Through factor analysis, a second-order factor structure consisting of two factors fitted the data best. The two dimensions identified were: initiating structure, that is behaviors that involve clarifying task responsibilities and providing direction for group members

(Lambert, Tepper, Carr, Holt, & Barelka, 2012; Likert, 1961), and consideration, behaviors that involve concern for group members' well-being and expressions of support and appreciation (Lambert et al., 2012). Although it is interesting that initiating structure and consideration have a long history in the leadership literature, Asenuga (2012) identified them with a focus on the small group leadership context to further highlight the incremental contribution of the study.

The two factors were internally consistent and their structure replicated in an independent sample. Measurement invariance analyses also revealed that the factor structure was consistent across two independent samples. The correlation of the small group leadership self-efficacy scores with subjective vitality (the state of feeling alive, alert, and having energy that is perceived to emanate from one's self; Ryan & Deci, 2001), previous leadership experience, and the valence of previous leadership experience provided preliminary convergent validity evidence for the measure.

Although Asenuga's (2012) development of the small group leadership self-efficacy measure and psychometric analysis of it has provided some initial insight about the construct, this effort was preliminary because the validity evidence presented was incomplete due to absence of criterion-related validity evidence. Specifically, evidence regarding its relationship with important criteria and its incremental explanatory value were not presented as the study did not examine how a measure of small group leadership self-efficacy contributes empirically to predicting organizational outcomes over and beyond existing and general leadership self-efficacy measures. Hence, the present study seeks to fill this gap by providing an empirical examination for the

introduction of the construct and measure to the scientific and applied field. It seeks to examine whether small group leadership self-efficacy demonstrates construct-related, criterion-related, and incremental validities, thus, furthering the understanding of, and ability to predict, leadership behavior.

The present study adds to the literature in several ways. Perhaps the biggest contribution is the introduction of the small group leadership self-efficacy construct to the field of leadership. Furthermore, the measure could be used to collect baseline leadership self-efficacy data that may be instrumental to determining the effectiveness of leadership training programs in organizations. Further, it is anticipated that this study could serve as a foundation upon which future small group leadership self-efficacy theory development and research is built. The validation of the small group leadership self-efficacy measure also offers significant benefits from an applied standpoint. It could (a) be used to periodically assess the leadership progress of trainees enrolled in leadership programs, (b) serve as a program evaluation tool for assessing the effectiveness of leadership training programs, and (c) inform the developmental goals that organizations set for their employees.

Two-Factor Conceptualization of Leadership Behavior

As previously noted, across the studies reported in Asenuga (2012), the investigations assessing the newly developed small group leadership self-efficacy measure identified two overarching leadership constructs that have long histories in the leadership literature, initiating structure and consideration, with remarkable consistency. Hence, a detailed review of these constructs is warranted.

With the goal to move away from a trait-based explanation of leadership effectiveness to a behavior-based approach, a traditional investigation of initiating structure and consideration was carried out in a series of studies in the 1940s and 1950s by researchers at Ohio State University (Halpin, 1957; Likert, 1961; Stogdill, 1963). These studies were conducted to determine if there was a common theme of behavior amongst leaders in different fields.

After identifying 1,800 examples of leadership behavior, the researchers (e.g., Halpin, 1957; Stogdill, 1963) developed a measure of leadership constructs known as the Leader Behavior Description Questionnaire (LBDQ) and administered it to hundreds of employees in varied industries. The studies narrowed down the original 10 leadership dimensions to the final two dimensions of initiating structure and consideration which accounted for 85% of the variance in descriptions of leader behavior. The studies concluded that consideration and initiating structure were the two themes that appeared most commonly across the different fields. The identification of these two dimensions or factors changed leadership research and led to the common proposal that leaders who emphasize both task and people dimensions likely experience higher levels of effectiveness (Likert, 1961).

Initiating structure is a task-oriented leadership behavior whereby a leader exhibits behaviors that involve defining task roles and responsibilities and providing direction for group members (Judge, Piccolo, & Ilies, 2004; Lambert et al., 2012). It is a label ascribed to leader behaviors which emphasize the accomplishment of tasks through activities that minimize role ambiguity and conflict, such as procedural specifications

and detailing expectations clearly and concisely (Burke et al., 2006). The set of leader behaviors that are encompassed by this dimension work to ensure that members have a clear and compelling purpose-oriented direction which serves to guide team action towards goal attainment. The leader manages material and personnel resources by defining group goals, assigning and clearly defining tasks, planning ahead, organizing the sequence of work-related tasks, pushing for production, and providing an environment that facilitates group goal attainment (Fiedler & Chemers, 1974). The strong initiating structure leader may criticize suboptimal work that does not meet the expected standards, demand the meeting of predetermined deadlines, and monitor the progress of pre-assigned tasks.

Consideration represents a relationship-oriented behavior in which a leader demonstrates concern for group members' well-being and expresses sympathy, support, and appreciation for them (Judge et al., 2004; Lambert et al., 2012). This concern for each individual serves as the foundation for the building of mutual trust and respect toward the development of a close social and professional relationship and group cohesion (Burke et al., 2006). Unlike initiating structure behaviors which focus on goals, processes, timeline, and product rather than the individual doing the work, considerate behaviors prioritize the individual and places an emphasis on satisfying group members' needs and dyadic relationships through the leader's communicating appreciation for work and support that members provide, and showing concern for members' work/life balance as well as respect for their overall wellbeing (Burke et al., 2006). This dimension does not suggest a superficial pat-on-the-back relationship, but

rather this dimension emphasizes a deeper concern for group members to the extent of allowing them more participation in decision making and facilitating more two-way communication (Fleishman & Harris, 1962). A considerate leader would show a caring attitude towards his/her group members in all areas of their lives and stresses the importance of job satisfaction. Group members feel at ease with a considerate leader because not only do the leader's actions make him/her easily approachable, the leader also treats them as equals by obtaining their approval before deciding on important issues (Bass & Bass, 2008).

Although there is empirical support for the effectiveness of both initiating structure and consideration as reflected in moderate relationships with leader effectiveness and group performance (Burke et al., 2006; Ceri-Booms, Curşeu, & Oerlemans, 2017; Judge et al., 2004), they are parallel constructs as each behavior is regarded as independent of the other (Northouse, 2016). Hence, a leader could be low on one and high on the other, or high or low on both simultaneously. Consequently, four combinations can be derived from these leadership styles, namely, high initiating structure-high consideration; high initiating structure-low consideration; low initiating structure-high consideration; and low initiating structure-low consideration. However, relevant research reviews (e.g., Fleishman, 1989) have concluded that the combination that results in the most favorable outcomes is one in which the leader is high in both initiating structure and consideration, conversely, a low initiating structure and consideration combination is the most undesirable for many situations.

Although the study of the effects of consideration and initiating structure on various criteria dominated leadership research for about three decades after their identification, methodological and conceptual criticisms (e.g., generalization of its validities and reliance on common source data) have been reported (e.g., Yukl, 2013). Additionally, the introduction of more recent leadership theories that built on the basic tenets of initiating structure and consideration (e.g., transactional and transformational leadership) contributed to the behaviors falling out of favor in scholarship and being "forgotten" throughout the 1970s and 1980s. Thus, the acceptance of these traditional leadership behaviors rather than the other proposed models (such as the model with five dimensions) as the underpinnings of small group leadership self-efficacy in Asenuga (2012) was unexpected and interesting, especially amid the aforementioned issues.

This renewed interest in these behaviors is consistent with the findings of recent studies (Bass & Bass, 2008; Ceri-Booms et al., 2017; DeRue, Narghang, Wellman, & Humphrey, 2011; Judge et al., 2004; Keller, 2006). To determine whether these behaviors are still important to leadership and to clarify research inconsistencies, Judge et al. (2004) carried out three meta-analyses consisting of 130 primary studies that measured the relationship between initiating structure and consideration and organizational criteria such as satisfaction, motivation, performance, and leader effectiveness. The results revealed that initiating structure and consideration had moderate average true score correlations of .29 and .48, respectively, across all aggregated leadership criteria. Initiating structure had a stronger relationship with leader effectiveness while consideration correlates more strongly with follower satisfaction.

Based on the results of the study, Judge et al. concluded that because the behaviors are important pieces in the leadership puzzle as valid predictors of leader outcomes, it was inadvisable to abandon them in leadership research. This revived interest in the two dimensions.

Keller's (2006) five-year study also found initiating structure to predict unique variance in all of the performance measures examined (technical quality, schedule performance, cost performance, profitability, and speed to market), similarly concluding that "it is time to bring initiating structure back into models of leadership for teams" (p. 209). Within the small group context, a task completion approach, namely production orientation and employee orientation, was found to correspond to initiating structure and consideration (Likert, 1961; Northouse, 2016); thus, reinforcing the importance of the behaviors. All of these validate the leadership styles as central to what leaders do and suggest that the abandonment of scholarly interest in initiating structure and consideration may be premature (Judge et al., 2004).

Review of Published Measures of Leadership Self-Efficacy

Prior to Asenuga (2012), no measure that assessed the components included in the definition of small group leadership self-efficacy existed. However, measures for a similar construct, leadership self-efficacy, exist and a review of these measures is provided. Although various measures[1] (e.g., Anderson et al., 2008; Bobbio & Manganelli, 2009; Chan & Drasgow, 2001; Chemers, Watson, & May, 2000; Paglis &

[1] Eleven were located through an extensive literature search.

Green, 2002) have been developed in pursuit of a valid assessment of leadership self-efficacy, a full discussion of all these measures is beyond the scope of the present study. Thus, while five measures with acceptable psychometric properties are reviewed below (see Table 2), they all reflect an omission of key aspects associated with the notion of leadership self-efficacy in small groups.

Table 2
Summary of Published Leadership Self-Efficacy Measures

Authors	Dimension # (Items #)	Alpha[A]	Sample Items
Chemers et al. (2000)	1 (24)	.84	I know what it takes to make a group accomplish its task
Chan and Drasgow (2001)	1 (6)	.80	I feel confident that I can be an effective leader in most of the groups that I work with
Paglis and Green (2002)	3 (12)	.92	I can figure out ways for my unit to solve any policy or procedural problems hindering our change efforts
Anderson et al. (2008)	18 (88)	.79	N/A
Bobbio and Manganelli (2009)	6 (21)	.91	I am confident in my ability to choose group members in order to build up an effective and efficient team

Note. [A]Total measure internal consistency reliability estimates. N/A = unable to retrieve measure.

Chemers et al. (2000). A unidimensional leadership efficacy measure that consisted of 24 items was developed and validated by Chemers et al. (2000). Although the authors began with two dimensions, namely "perceived leadership efficacy" and "generalized leadership capability" subscales, they were merged based on factor analytic results. A major critique of this measure apart from its unidimensionality is that 16 of its

24 items were not only developed using the Army Leadership Assessment Program, a standardized rating form used for the evaluation of army officers, they were also validated solely with Corps of Cadets. It can be argued that because the leadership competencies an army officer is expected to display are likely different from a group leader in a civilian setting, this measure may not apply to such contexts, thus, displaying low generalizability.

Chan and Drasgow (2001). Chan and Drasgow (2001) developed a 6-item unidimensional measure of leadership self-efficacy which was used to predict a multidimensional "motivation to lead" outcome. This unidimensional approach may present a challenge not only when leadership researchers seek to link the behavioral tendencies to a similar measure for validation purposes, but also when practitioners attempt to use facet level scores to predict more specific leadership criteria in order to enhance predictive validity.

Paglis and Green (2002). Pagils and Green (2002) operationalized leadership self-efficacy as managers' motivation to promote and practice change-oriented leadership. A 12-item measure consisting of three dimensions (direction-setting, gaining commitment, and overcoming obstacles) was developed and validated. Paglis and Green showed that leadership self-efficacy was related to increased attempts to lead. Although recognized as one of the first studies to propose and validate a leadership self-efficacy measure, defining leadership self-efficacy solely as leading change in organizations is too narrow in focus. This is because research on leadership echelons conclude that there is a fundamental difference between leadership behaviors displayed at different

organizational levels (Antonakis & Atwater, 2002) as the need to engage in more complex information processing increases at higher echelons in the organization (Jacob & Jaques, 1987). However, little attention was given to the function of directing a small group. The measure has also been criticized for having a highly constrained framework while having a taxonomy that was rationally-derived from a small sample of previous research (Anderson et al., 2008). Furthermore, some items on the measure seem to capture management (or pre-determined and position-bound functions) rather than leadership.

Anderson et al. (2008). Anderson et al. (2008) improved on the work of Paglis and Green (2002) and their study sought to develop a more comprehensive leadership self-efficacy measure using data obtained from 44 subject matter experts. This resulted in 18 taxonomies of leadership self-efficacy that were posited to capture the full range of leadership activities. Examples of these leadership self-efficacy dimensions are change, drive, solve, challenge, and serve. Despite its going beyond previous research by defining a more specific taxonomy of leadership self-efficacy, a shortcoming of Anderson et al. (2008) was the lack of criterion-related validity evidence for the measure as a whole. In addition, the 18 dimensions may be too many to be practically useful in an applied setting.

Bobbio and Manganelli (2009). Bobbio and Manganelli (2009) developed a 21-item leadership self-efficacy measure consisting of six dimensions. The study found the measure scores to be internally consistent. Although the measure had positive correlations with the amount of past and present leadership experiences as well as

motivation to lead, one of its dimensions, choosing effective followers, may not be applicable to small group leaders who most likely do not have the liberty of pre-selecting their group members.

The culmination of the review above reflects a need for the validation of a small group leadership self-efficacy measure. Although these omnibus measures likely offer convenience, predictive power is sacrificed as the measure becomes more general (Gist, 1987). Bandura's (1997) guideline that measures of self-efficacy should be tailored to the context being analyzed was not followed, thereby, resulting in a mis-measurement which would lead to ill-defined constructs and confounded and uninterpretable findings.

The authors of these measures also fail to acknowledge the changes that occur in the effectiveness of leadership behaviors as a function of the context or size of the group that is being led. Thus, the measures above appear inclusive of different leadership contexts by assuming a "one size fits all" approach. This constitutes a threat to construct-related validity (Messick, 1995) as the measures are either contaminated (when items that are irrelevant to leadership self-efficacy within small groups are included) or deficient (when the items do not fully represent the domain of leadership self-efficacy within small groups). This construct-irrelevant variance could either inflate or attenuate predictor-criterion relationships (Messick, 1995).

Furthermore, some items on these measures seem to capture leadership as though it refers to management rather than the social dynamic that arises in relationships among people (Graen, 2006). Because a leader wields incremental influence over and beyond management functions as s/he influences unpredictable exigencies that occur in

organizations but cannot be specified through most managerial policies (Osborn et al., 2014), an empirical leadership self-efficacy study that recognizes this difference is warranted. Given this missing link in the existing measurement of leadership self-efficacy, there is a need for a focus on small group leadership self-efficacy that addresses this concern.

Test of Replicability: Cross Validation of a Measurement Model

Replication or cross validation in a new sample is an essential activity that follows the acceptance of a measurement model (Kline, 2016). To assume that a model would remain consistent or would be equally useful in another sample within the same population seems rational, but because suboptimal sampling whereby the sample was not randomly drawn from the population is common, the assumption should be tested. Low predictions and erroneous decisions could result when the model is applied to another sample in the absence of cross-validation. Cross-validation in a second sample is, therefore, necessary to accurately determine the predictive validity of a measurement model and to test whether the model consistently relates to the outcome variable in additional samples of the population (Kurtz, 1948).

Cross-validation is a method of assessing the replicability of the predictive ability of a model. The idea underlying the procedure is that if a prediction model is valid, then it should predict effectively in a second sample from the population, hence, its general conceptualization as a two-sample process. There are two approaches to estimating the cross-validity of a measure, the statistical and empirical approach. The present study utilizes the empirical approach. Empirical cross-validation is conducted by estimating a

prediction model from an initial sample, often referred to as the developmental sample, and then applying that model to a second sample, the validation sample, from the population. This process may seem demanding especially if the estimated model fits the data from the developmental sample well, however, the model would not provide an indication of the quality of the fit to other samples in the population.

Because self-efficacy develops in response to motivational, cognitive, and affective processes (Bandura, 1993), its factor structure has not only been found to be multidimensional but also hierarchical (e.g., Kennedy, 1999) where the leader self-efficacy to perform the specific task is in the first-order (i.e., initiating structure and consideration). The intercorrelation of initiating structure and consideration (e.g., Asenuga, 2012; Judge et al., 2004) signals the presence of a second-order latent dimension reflecting initiating structure and consideration. Thus, a latent factor that accounts for the relationship between the initiating structure and consideration factors is proposed.

The conceptualization of self-efficacy as two distinct efficacies that determine how well an individual is efficacious about his/her overall leadership self-efficacy in a small group context reveals a primarily reflective model of measurement (see Figure 2). A reflective model is one in which changes in the indicators or items reflect changes in the latent construct and the indicators are all related to the broad latent construct of self-efficacy (Coltman, Devinney, Midgley, & Venaik, 2008). Although the construct is theorized as primarily a reflective measurement model, formative properties exist as well as changes in the latent construct, small group leadership self-efficacy, are caused by

variations in the indicators (i.e., initiating structure and consideration) while those are also influenced by previous leadership experience.

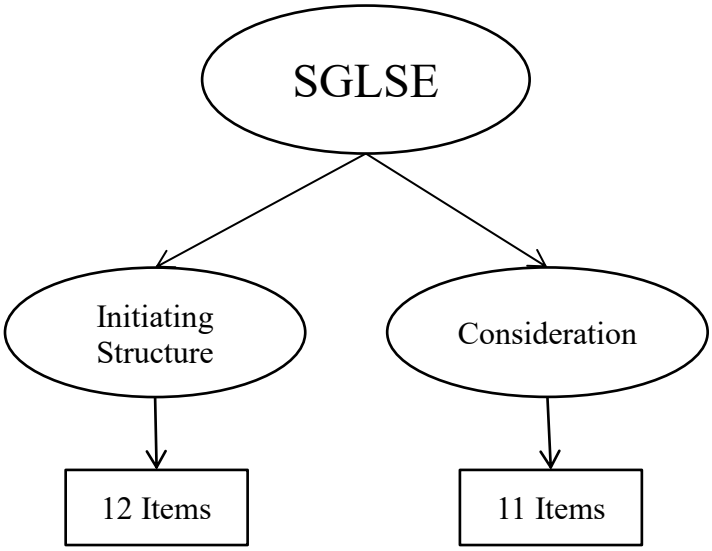

Figure 2. Second-order model with two first-order factors. SGLSE = small group leadership self-efficacy.

In order to examine whether the convergent validity, namely positive correlations with previous leadership experience and subjective vitality, found in Asenuga (2012) was not the effect of capitalizing on the peculiarities in the original sample data and to conclude that the small group leadership self-efficacy measure is viable, the following cross-validation hypothesis is proposed:

> *Hypothesis 1*: The two-factor structure of the small group leadership self-efficacy measure obtained by Asenuga (2012) will be replicated in a new sample of participants.

Construct-Related Validity Evidence

A number of considerations are of importance when establishing the psychometric soundness of a measure. An important step and ultimate goal is evaluating the validity of the measure (Hinkin, 1995). Specifically, validity refers to appropriateness of inferences drawn from a measure's scores (Binning & Barrett, 1989; Society for Industrial and Organizational Psychology, 2003). In general, there are several strategies for assessing the validity of a measure, however, due to the goals of the present study, only construct-related validity, criterion-related validity, and incremental validity were examined.

Construct-related validity is the degree to which a measure truly assesses the theoretical construct it is purported to measure (Anastasi & Urbina, 1997). It is also the extent to which measure scores relate to scores on other measures in a manner that is consistent with theory. One way of assessing the construct-related validity of a measure is to examine its convergent and discriminant validity (DeVellis, 2003). *Convergent validity* is the extent to which two different measures of the same or related construct covary (Campbell & Fiske, 1959). A broad guideline on appropriate levels of convergent validity was proposed by Campbell and Fiske (1959) who recommended that a simple "demonstration of some convergence, not complete congruence" is sufficient to justify convergent validity (p. 102).

Asenuga (2012) examined the convergent validity of the small group leadership self-efficacy by comparing its composite score to those of subjective vitality based on the premise that the latter is related to leadership self-efficacy because it shields

individuals from the anxiety that diminishes self-efficacy. The study found a positive correlation (r = .42) between them. The present study further explored this validity by empirically comparing small group leadership self-efficacy to the most cited measure of leadership self-efficacy, the Paglis and Green (2002) measure, and a generic self-efficacy measure which is routinely used. It is expected that there will be a strong, positive correlation between the two measures and the proposed measure given that they are measures of leadership self-efficacy.

Although a strong correlation of the small group leadership self-efficacy with the Paglis and Green's (2002) measure is anticipated, the introduction of the small group leadership self-efficacy measure is nonetheless justifiable. This is because the small group leadership self-efficacy measure as a narrow and more specific measure (Ones & Viswesvaran, 1996) should enhance the identification of effective leaders in a narrow or small group context and should be useful in identifying employees for training and development purposes. Therefore, the following hypothesis is proposed:

> *Hypothesis 2*: The small group leadership self-efficacy measure will be positively related to (a) Paglis and Green's (2002) leadership self-efficacy measure, and (b) the generic self-efficacy measure.

Discriminant validity refers to the extent to which measures of theoretically distinct constructs are unrelated or do not strongly relate empirically to one another (Campbell & Fiske, 1959). It also serves as the most direct way of demonstrating the empirical distinctness of a construct (Shaffer, DeGeest, & Li, 2016). To be considered empirically distinct from one another, constructs should not be perfectly (or near

perfectly) correlated and small to moderate correlations are expected (Anastasi & Urbina, 1997). The present study seeks to demonstrate the conceptual and empirical distinctiveness of the small group leadership self-efficacy construct with constructs with which it has no theoretical commonalities, namely hedonism and continuance commitment. The justification for these two constructs is presented in the paragraphs that follow.

Hedonism is the view that personal pleasure and satisfaction are the only goals in life and that all motivation is based on the prospect of pleasure (O'Shaughnessy & O'Shaughnessy, 2002). Like other values, hedonism transcends specific situations and is relatively enduring over time (Kozlowski & Bell, 2013). Because of a preoccupation with selfish pleasure, an individual who subscribes to hedonistic values deliberately avoids anxiety (Illies, Morgeson, & Nahrgang, 2005). This in turn mitigates his/her growth and development as a healthy measure of anxiety leads to a life of meaning and purpose (Illies et al., 2005).

Hedonism goals have been found to negatively correlate with leader emergence and individuals who value hedonism are less likely to engage in leadership activities (Illies, 2002). Because hedonism serves individual rather than collective needs and is simply a search for gratification, fun, and playfulness and has been considered a leader's temptation (Kakabadse, Kakabadse, & Lee-Davies, 2007), it is, therefore, unrelated to task completion (Scarpi, 2012). From this definitional perspective, small group leadership self-efficacy is proposed to be distinct from Hedonism. Given that self-efficacy beliefs contribute to sustaining motivation, resiliency under adverse situations,

and effective performance under stress (see Bandura, 1997), a weak negative relationship between hedonism and small group leadership self-efficacy is expected. Consistent with this expectation, the following is proposed:

Hypothesis 3a: Small group leadership self-efficacy will have a negative (close to zero) relationship with hedonism.

Continuance commitment is the calculative mindset of organizational commitment whereby an employee maintains a relationship with the group because s/he needs to due to the perceived costs of leaving the organization (Meyer & Allen, 1997). It is based on economic exchanges that result from cost calculation and it is unlikely that an individual high on small group leadership self-efficacy would develop this form of commitment towards the group. This is because unlike social exchanges, economic exchanges are largely impersonal and devoid of the mutual respect, affection, and trust one would expect from high quality LMX relationships a small group affords the leader (Gouldner, 1960). Furthermore, if employees in high-quality LMX relationships have been found to demonstrate commitment beyond contractual obligations to their group (Lunenburg, 2010), one cannot expect a small group leader to display *strictly* contractual commitments to his/her group.

Inherent in the definition of continuance commitment is its conceptual distinctness from small group leadership self-efficacy because self-efficacy often fosters the independent setting of goals and exertion of extraordinary effort in order to accomplish those goals. Based on self-efficacy and LMX theory, it is reasonable to infer

that there would be a weak relationship between small group leadership self-efficacy and continuance commitment. Thus, the following is proposed:

Hypothesis 3b: Small group leadership self-efficacy will have close to zero relationship with continuance commitment.

It is worthy of note that although small group leadership self-efficacy has no theoretical commonalities with hedonism and continuance commitment, it is expected to have a shared variance with both of them due to having a common method of assessment (i.e., online administration) and response method (self-report). Thus, a correlation close to zero (similar to the hypotheses) will further indicate the theoretical distinctness of small group leadership self-efficacy from both constructs.

Prediction of Important Leadership Outcomes

The growth of groups or teams in organizations has led to an explosion of empirical work on group outcomes which includes the role of leaders in facilitating group goals (Hackman & Wageman, 2005). This comes as no surprise because the hallmark of effective leadership is the achievement of group goals (Zaccaro, Rittman, & Marks, 2002). According to functional leadership theory, not just any leadership action contributes to the achievement of group goals but rather contextual circumstances call for certain leadership actions for group success, while negating the utility of other actions.

There are two main types of outcomes in leadership research: leadership emergence and leadership effectiveness (Hogan, Curphy, & Hogan, 1994). Leader emergence is regarded as an individual's exertion of influence over other group

members and completion of leader-like work duties even when s/he does not occupy a formal leadership position (De Souza & Klein, 1995). If other group members perceive the target group member to be "leader-like," then they will lean towards appointing the target member into a leadership position, thus, leadership emergence is a product of others' perception of leadership potential. Because ratings of leadership emergence are often based on brief and limited information about the target individual's leadership performance, information about leadership effectiveness is limited. Thus, measures of leadership emergence typically reflect first impressions rather than actual leader ability (Judge, Bono, Ilies, & Gerhardt, 2002).

If leadership is conceptualized as influence over group members, then the natural emergence of leadership that occurs from interaction among group members may be difficult to envisage (Osborn et al., 2014) especially in a situation where multiple individuals in the group are leader-like. Thus, the present study views leadership as stemming from individuals acting in formal settings with defined roles rather than an emergent phenomenon. Leadership effectiveness differs from leadership emergence as the former is results-oriented and is considered in terms of the leader's influence on the group's performance (Kaiser, Hogan, & Craig, 2008). Moreover, evaluations of a leader's performance by others is based on information that has been gathered from ample interactions with the leader (Judge et al., 2002). These evaluations also predict objective measures of group or team performance (Hogan et al., 1994).

To establish the psychometric integrity of scores on small group leadership self-efficacy, it is critical to examine relationships between such scores and external criteria.

Criterion-related validity is a strategy used to assess whether a measure predicts important outcomes, in this case, leadership outcomes. This validity evidence is the practical aspect of assessment because it establishes the usefulness of a measure. It is the extent to which measure scores relate to a criterion (a work-related behavior or work outcome). Two approaches were used to determine the criterion-related validity of the small group leadership self-efficacy measure: other ratings of effective leadership behaviors, and the willingness to assume a leadership role.

Other Ratings of Effective Leadership Behaviors

Historically, researchers have sought to identify the individual difference variables that distinguish leaders from non-leaders (e.g., Day & Zaccaro, 2007). In a meta-analysis of 187 studies, Hoffman, Woehr, Maldagen-Youngjohn, and Lyons (2011) reviewed a wide range of leadership characteristics that predict effective leadership. Although they used the self-confidence label, a review of the items from the coded primary studies indicated that the construct appeared to be more self-efficacy than self-confidence. Unlike self-efficacy, self-confidence, which is the perceived belief that one has the competence to deal with the demands of many situations successfully (Shrauger & Schohn, 1995), is a construct that is not domain specific and lacks a validated theoretical framework (Bandura, 1997). Self-efficacy was found to predict leadership effectiveness (corrected correlation: ρ = .24, N = 11,888; Hoffman et al., 2011). Because self-efficacy has a great influence on motivation and perseverance (Bandura, 1997), it should play a role in predicting effective leadership. Consequently, a number of attempts have been made to link self-efficacy to leadership (e.g., Chan & Drasgow,

2001; Hendricks & Payne, 2007), however, theory building contributions are limited (Hannah, Avolio, Luthans, & Harms, 2008).

Leadership effectiveness has been defined in numerous ways by various researchers based on their diversified conceptions of leadership (Yukl, 2013). The identification of a comprehensive list of behaviors that constitute effective leadership that are applicable to all leaders and organizations would prove daunting. This lack of consensus in the definition of leadership effectiveness is no surprise because leadership itself is not a one-size-fits-all phenomenon (Grimm, 2010) and the nature of the leadership literature is fragmented. However, George (2000) categorized essential elements of effective leadership into: (a) developing a collective set of goals and the process through which they would be achieved, (b) fostering a work climate that promotes confidence, cooperation, and trust, (c) motivating flexibility in decision making, and (d) creating a sense of community towards the establishment of a group identity. Yukl (2008) also classified effective leadership behavior into: (a) *task-oriented behaviors* which a leader uses to increase productivity (e.g., planning, assigning tasks, and monitoring), (b) *relational-oriented behaviors* which are used to improve the leader's relationship with group members (e.g., mentoring, empowering, network-building), and (c) *change-oriented* behaviors which are used to identify any threat or opportunity in the environment that informs the need for a major change (e.g., inspiring vision, taking risks, coalition building).

Although leadership effectiveness could be operationalized in a number of ways, for the sake of clarity, the present study used the definition of leadership offered by

Northouse (2016): leadership is the "process whereby an individual influences a group of individuals to achieve a common goal" (p. 6). This definition is appropriate for the present study not only because the notion of exercising influence characterizes early conceptualizations of leadership (Bass & Bass, 2008), but also because it aligns with the purposes of the present study. Consequently, leadership effectiveness is viewed as an individual's successful accomplishment of group goals by influencing group members to action while fostering a climate of collaboration in the group. Effective group leaders often define the critical leadership activities for particular group contexts (Zaccaro, 2002). A leader who builds and maintains relationships, obtains and provides information to group members, and influences people is regarded as effective (Yukl, 2013).

The recognized importance of leadership effectiveness to organizations justified its inclusion in the present study (Hoffman et al., 2011). Hannah et al. (2008) indicated that leadership self-efficacy involves a leader's perception of their capabilities and how they can be used in a given context. Thus, leadership self-efficacy could be helpful to predicting, understanding, and developing leadership effectiveness (Anderson et al., 2008). Moreover, individuals high in leadership self-efficacy will perceive themselves as having the skills needed to be effective leaders and this belief results in their exerting additional effort in a sustained manner in order to be effective leaders (Anderson et al., 2008). It is no surprise that the work-related outcome that has gained the most interest in leadership self-efficacy research is leadership effectiveness (Paglis, 2010). Meta-analysis reveals that self-efficacy is a significant and positive correlate of performance

(Stajkovic & Luthans, 1998) and previous research found that individuals high on leadership self-efficacy are more likely to be effective leaders than individuals low on leadership self-efficacy (e.g., Anderson et al., 2008; McCormick et al., 2002; Seibert, Sargent, Kraimer, & Kiazad, 2017). Thus, it is logical to predict that posttraining small group leadership self-efficacy would be related to successful performance in the leadership role.

However, Sitzman and Yeo's (2013) recent meta-analysis of 38 studies lends support to the notion that Bandura's social cognitive theory may not provide a full representation of the efficacy-performance relationship. The meta-analysis found that the self-efficacy → performance within-person correlation lagged behind the previous performance → self-efficacy correlation in strength. This indicates that self-efficacy is likely a reflection or by-product of past performance more than a predictor of future performance. This is no surprise given that Bandura's (1977) original conceptualization of self-efficacy emphasized a reciprocal relationship between self-efficacy and previous achievement, such that, awareness of one's previous success at a given task informs one's self-efficacy beliefs, which in turn influences success in subsequent, related tasks (Paunonen & Hong, 2010). Furthermore, it has been reported that the nature of the efficacy-performance relationship is cyclical as consecutive changes in efficacy and performance build upon each other (Lindsley, Brass, & Thomas, 1995). This notion of efficacy-performance spirals captures both views on the direction of the self-efficacy-performance relationship.

Because the present study design is mostly aligned with the examination of the *self-efficacy → performance* (also leadership effectiveness) relationship, it is critical to ensure that an investigation of self-efficacy and its outcomes is not carried out concurrently because a concurrent design would not permit the parsing out of the directionality of the relationship (Shadish, Cook, & Campbell, 2002; Sitzmann & Yeo, 2013). Thus, a predictive research design was conducted as temporality is an important feature in the study of behavior in organizations (George & Jones, 2000). Data analyses of a pretraining and posttraining self-efficacy measure and a posttraining performance measure could identify the true training effect by separating self-efficacy from performance (Sitzmann & Yeo, 2013). Although the present study is predicated on the *self-efficacy → performance* relationship, a supplementary examination of the *performance → self-efficacy* relationship was undertaken, because the amount of previous small group leadership experience (a proxy of learning and past performance) data were collected prior to collecting small group leadership self-efficacy and future leadership behavior rating. Hence, the issue of directionality of the self-efficacy and performance effect was examined.

Research Question: Is the self-efficacy → performance relationship stronger than the performance → self-efficacy relationship?

Consistent with Bandura's (1997) proposition that self-efficacy influences the course of action people pursue and the activities they believe that they can best perform, data on effective leadership behaviors displayed by participants' after the assumption of a leadership role was collected to establish criterion-related validity. It was anticipated

that the small group leadership self-efficacy measure would help explain individual differences in subsequent success in small group leadership contexts.

In leadership research, leadership effectiveness is operationalized in multiple ways. Some of the approaches used to assess leadership effectiveness include perceived leadership effectiveness (e.g., Giessner & van Knippenberg, 2008), leadership endorsement (Ullrich, Christ, & van Dick, 2009), self-reported work effort (e.g., León, Cantisano, & Mangin, 2009), job satisfaction (e.g., Cicero, Pierro & van Knippenberg, 2010), turnover intentions (Cicero et al., 2010), and objective measures of organizational success (e.g., DeRue et al., 2011). In order to assess perceived leadership effectiveness, the present study utilized other (group members, peers, and/or supervisors) ratings rather than self-rating or actual performance measures which are the most commonly used methods of assessing leadership effectiveness (Judge et al., 2002).

Given that self-ratings of leadership effectiveness offer little information about true effectiveness and tend to be overestimates of skill and behavior (Fleenor & McCauley, 1996; Hogan et al., 1994), they were not considered for inclusion in the present study. In addition to being difficult to collect, objective performance criteria have been criticized for being contaminated by external factors (e.g., economy, industry standards, team dynamics, or organizational influences) beyond the leader's control (Hogan et al., 1994). Because a leader's role could be said to be primarily relational, effectiveness is partly in the eye and experience of the group members who interact with the leader (Cooper & Nirenberg, 2004; Schyns & Sanders 2007), thus, other ratings were used because of their relative stability (Reilly & Chao, 1982).

Subjective criteria of leadership effectiveness in the leadership literature often include measures that address how leaders meet the needs and expectations of their supervisors, peers, or group members (Yukl, 2013) with the end goal of attaining a comprehensive view of leadership effectiveness from the different perspectives of the different raters (Fletcher & Perry, 2002). This is because, as previously noted, leadership effectiveness is in the eye of the beholder. According to social information processing theory, other-perceptions of a leader's effectiveness are based on informative and communication cues formed about an individual in a shared reality where previous interactions occurred (Back, Schmukle, & Egloff, 2009). Other ratings have been used in the prediction of work-related performance (Judge et al., 2004; Zimmerman, Triana, & Barrick, 2010).

In sum, to ensure that the unique perspectives of a leader's effectiveness are observed, two sources of ratings of leadership outcomes, rather than the traditional single perspective, were utilized. Specifically, the following is posited:

Hypothesis 4: Posttraining small group leadership self-efficacy will be positively related to effective leadership behaviors in a leadership role in a small group.

Potential Leadership Role Assumption

According to social cognitive theory, self-efficacy predicts not only effort, but also the willingness to approach new and challenging situations related to the self-efficacy construct domain (Bandura, 2001). There is extensive research suggesting that the more efficacious one is about successfully performing an activity, the more likely it is that one will voluntarily participate in the activity (e.g., Maurer, 2001) based on the

assurance that one can exercise control over the situation. With regards to leadership, leaders who are high on leadership self-efficacy may seek out higher levels of leadership responsibility via promotion. Empirical evidence reveals that leadership self-efficacy is related to attempts to lead or assume leadership roles (McCormick et al., 2002; Paglis & Green, 2002).

According to the theory of planned behavior, behavior intentions reveal how much effort one is willing to expend in order to perform a behavior (Ajzen, 1991). The theory suggests that a strong intention increases the likelihood that an individual will perform the behavior. High levels of self-efficacy results in stronger intentions to perform a behavior as efficacy beliefs are often depicted as a direct predictor of intention and task choice (Bandura, 1997; Stajkovic & Luthans, 1998). This effect has been extensively demonstrated (e.g., Zhao & Namasivayam, 2009). Thus, individuals higher in self-efficacy are likely to seek out opportunities to demonstrate an ability to learn and grow in the domain of the self-efficacy construct.

The present study, combining ideas of social cognitive theory and theory of planned behavior, seeks to determine whether small group leadership self-efficacy is associated with the intention or willingness to assume a small group leadership role. It is posited that small group leadership self-efficacy will be an important influence on whether or not an individual attempts to take on or fill small group leadership positions. The degree to which individuals feel efficacious should, therefore, predict their willingness to take on new or more challenging leadership roles (Hadley, Pittinsky, Sommer, & Zhu, 2011). Thus, participants' willingness to take up small group

leadership roles upon leadership training completion was compared to their small group leadership self-efficacy scores. Additionally, consistent with the tenets of control theory which posits that behavior is determined through the alignment of the perception of the consequences of one's action and one's goals (Powers, 1991), if self-efficacy beliefs are positive, then one might perceive an avenue for mastery as either readily attainable or beyond reach. This may affect one's decision regarding that opportunity.

Furthermore, posttraining leadership self-efficacy performs two purposes: (1) it triggers an individual's self-reflection on his/her capacity and whether or not s/he is "able" to perform the new task; and (2) the motivational property this knowledge engenders increases the individual's "willingness" to perform (Zhao & Namasivayam, 2009). Because posttraining self-efficacy is an important factor in translating training goals into work behaviors, the following is proposed:

Hypothesis 5: Posttraining small group leadership self-efficacy will be positively related to the willingness to assume a leadership role in a small group.

Criterion for Training Program Effectiveness

Bandura (1977) theorized that one's self-efficacy could be modified through a number of extrinsic and intrinsic influences, thus suggesting verbal persuasion, emotional arousal, personal mastery experience, and vicarious experiences as sources of self-efficacy beliefs. With regard to vicarious experiences, Bandura explained that individuals learn by observing a model that they judge as knowledgeable and credible. This exposure will then inform perception of their ability to successfully perform the required task (Bandura, 1997). One way in which training improves self-efficacy is by

providing vicarious experiences to trainees (e.g., Cicotto, De Simone, Giustiniano, & Pinna, 2014). This is because training programs include interactions with trainers, teachers, or coaches, case studies, and discussions, which provide avenues for trainees to learn vicariously about leadership from role models they observed or read about during the training (Conger, 2010). According to Bandura (1997), coaching and role-modeling techniques (arguable forms of training) provide opportunities for vicarious learning which positively influences self-efficacy.

Formal training is perhaps the most commonly used leadership developmental tool in organizations, incurring over $13 billion annually (Loew & O'Leonard, 2012). Training affords trainees a platform for practicing the skills needed to perform target tasks (Kameg, Howard, Clochesy, Mitchell, & Suresky, 2010). In order to determine whether the goals of training have been met, measures of training effectiveness are utilized. Training is said to be effective when its outcomes are met (i.e., training acquisition) and trainees apply the training content to their jobs (i.e., transfer of training; Arthur, Bennett, Edens, & Bell, 2003; Tracey, Hinkin, Tannenbaum, & Mathieu, 2001). The most widely cited approach used to operationalize the effectiveness of training is Kirkpatrick's (1959, 1994) four-level model of training evaluation criteria (reactions, learning, behavior, and results). The reaction criteria measures trainees' feelings and attitudes concerning both the materials and the training instructor. The learning criteria is concerned with the understanding and mastery of principles, facts, and skills that were highlighted in training. Behavioral criteria represent the extent to which the knowledge and skills learned in a training program is observed in the trainee's work environment.

Kirkpatrick's (1994) results criteria refer to the impact of training on organizational objectives in terms of improved quality, increased production, and reduced costs.

A connection between self-efficacy improvement and the learning criteria can be made as learning includes attitude change (Kraiger, Ford, & Salas, 1993; O'Connor, Jones, McCauley, & Buttrey, 2012). Thus, the present study conceptualizes training effectiveness as cognitive learning demonstrated by increased small group leadership self-efficacy.

Pretraining and Posttraining Comparison

Pretraining, training, and posttraining are different phases of the training sequence and it has been suggested that prospective trainees have self-efficacy before participating in the training intervention or attain it during training (Salas & Cannon-Bowers, 2001). Research has identified pretraining self-efficacy as a critical factor that contributes to the effectiveness of training programs (Tracey et al., 2001; see also Colquitt, Lepine, and Noe's [2000] meta-analysis on training motivation). During training, knowledge about how to perform a task increases and this knowledge should reinforce posttraining self-efficacy beliefs whereby trainees perceive their ability to act as prescribed by the training program.

Inferences about a training program's effectiveness can be made from the difference that results from the comparison of the pretraining and posttraining results. The present study proposes that the degree to which an individual perceives him/herself as having acquired applicable knowledge during leadership training will heighten the individual's perceptions of small group leadership self-efficacy. Thus, the small group

leadership self-efficacy measure was used as a pre-test/post-test instrument to assess the effectiveness of a leadership training program.

This is consonant with previous empirical research demonstrating that there are significant posttraining increases in self-efficacy for trainees who were exposed to various forms of training (e.g., Cicotto et al., 2014; McCrory, Cobley, & Marchant, 2013). According to social cognitive theory, efficacy-enhancing processes include role modeling, social persuasion, enactive mastery, and emotional regulation during task performance (Bandura, 1986, 2001). Training programs likely serve as a source for these processes. The opportunity to learn abstract concepts and principles while also receiving positive feedback from trainers should decrease trainees' anxieties about their abilities and provide them with improved confidence in their abilities, which reflects the social persuasion and emotion regulation efficacy-enhancement processes (Conger, 2010). Given the expectation that a robust leadership training program will have a positive influence on leadership self-efficacy, evidence for the validity of the small group leadership self-efficacy measure will be established with the demonstration that trainees' espouse higher small group leadership self-efficacy *after* a leadership training program than *before*. Accordingly, the following is hypothesized:

> *Hypothesis 6*: Trainees will show an increase in small group leadership self-efficacy after completing a leadership training program.

Length of the Training Program

Although a number of research studies have found that training increases self-efficacy which in turn relates to positive training outcomes, there exists a possibility that

the nature of training programs may negatively impact self-efficacy (Zhao & Namasivayam, 2009). If the nature of the training facilitates learning and the training objectives are met, self-efficacy levels should be enhanced and transfer of training to the work environment can be expected. The reverse is also true when training impedes learning and self-efficacy, for example, by overwhelming trainees with content in a fire-hose and disorganized format. Training factors that impact training effectiveness include the similarity in the training content and actual task and the time allotted for practicing new skills (e.g., Velada, Caetano, Michel, Lyons, & Kavanagh, 2007). Of considerable significance is the amount of training time required to achieve training objectives (Thacker & Blanchard, 2006) and/or changes resulting from the program (Golembiewski, Billingsley, & Yeager, 1976).

Time has been emphasized in the training literature as a critical resource that determines the effectiveness of a training program (Shapiro, 1995). A training program should provide sufficient time to learn new skills in order for the training goals to be met and for the training needs identified to be filled (Campbell & Kuncel, 2001; Cole, 2008). More training time provides the opportunity to practice with a variety of situations that may be encountered on the job (Holladay & Quinones, 2003). Sufficient training time facilitates overlearning, that is the overtraining of a task past a predetermined performance criterion (Driskell, Willis, & Copper, 1992). This not only leads to increased training transfer but also longer retention of new information, performing the task automatically, and maintaining optimal performance even during duress (Wexley & Latham, 2002). Trainees have also been shown to develop accurate self-perceptions that

are devoid of social desirability responding in later stages of training (Lee & Klein, 2002). Cole (2008) found that when the goal of the training was to change behavior, sufficient length of training is especially important. A behavior modeling training meta-analysis also reported that skill development was best with longer training times (Taylor, Russ-Eft, & Chan, 2005).

Consequently, the present study seeks to examine the differences in small group leadership self-efficacy that result from a comparative assessment of the leadership training program length. This proposed examination responds to Arthur et al.'s (2003) call for studies that examine the effectiveness of different training methods for the same content (for example, leadership in this instance), and Bhatti and Kaur's (2010) recommendation for new studies that empirically examine the impact of training design on self-efficacy. Criterion-related validity evidence was derived by assessing trainees' changes in small group leadership self-efficacy scores based on the length of the training program. That is, if different training programs are differentially effective, then the observed relationships between the different programs and small group leadership self-efficacy should also be differentially affected. Thus, the following is proposed:

Hypothesis 7: Trainees who were enrolled in lengthy training programs will show a greater degree of small group leadership self-efficacy score improvement than those enrolled in shorter training programs.

Hypothesis 8: Training length will moderate the relationship between posttraining small group leadership self-efficacy scores and (a) other ratings of leadership effectiveness, and (b) potential leadership role assumption, such that

the relationship will be stronger in longer training programs than in shorter training programs.

Incremental Validity Evidence

Another important consideration when establishing the utility of a measure is its incremental validity. For a new measure intended for scientific and applied use (i.e., academic, personnel, or clinical applications) to be welcomed into the field, it should explain variance that is not accounted for by well-established measures or available sources of data (Sechrest, 1963). Misaligning broad constructs in the prediction of more specific behaviors jeopardizes precision, whereas aligning narrower constructs with specific attributes increases accuracy (Ones & Viswesvaran, 1996) and is relevant to incremental validity. Thus, a comparative test of the predictive validity of the small group leadership self-efficacy measure against (a) well established extant leadership self-efficacy measures (Paglis & Green, 2002) and (b) measures that are routinely used and readily developed to measure self-efficacy following the guidelines recommended by Bandura (1997) is warranted. This will determine whether the new measure adds to the prediction of criteria and explains variance above what can be predicted by other sources of data or validated leadership self-efficacy measures (Cronbach & Gleser, 1957).

The Construct Proliferation Issue

One question a perceptive reader may raise is whether the introduction of the small group leadership self-efficacy construct is an example of construct proliferation or whether it constitutes construct redundancy given its theoretical relatedness to the

broader conceptualization of leadership self-efficacy. It is important to resolve this question because it raises the construct proliferation issue which threatens the development of parsimonious theories (Le, Schmidt, Harter, & Lauver, 2010). Construct proliferation is "the accumulation of ostensibly different but potentially identical constructs representing organizational phenomena" (Shaffer et al., 2016, p. 80). It occurs when new constructs that are theoretically or empirically indistinguishable from existing constructs are introduced as unique. This contaminates clear thinking and further impedes scientific parsimony rather than facilitate theoretical progress (Popper, 1959; 2005). Many examples of construct proliferation have been demonstrated in literature (Le et al., 2010). One well documented example is the varied constructs used to conceptualize mistreatment (Hershcovis, 2011).

Informed by theory (e.g., SCT and LMX), it is posited that the small group leadership self-efficacy construct and the measure used to assess it captures self-efficacy that is distinct from the existing conceptualizations and measures of leadership self-efficacy. The present study seeks to examine this proposition empirically by examining whether the construct captures unique beliefs and predicts outcomes that existing leadership self-efficacy constructs do not capture or predict. Through discriminant validity analysis, the present study seeks to evaluate the conceptual and empirical uniqueness of the new construct in question compared to known constructs in order to advance knowledge and not to violate the scientific principle of parsimony which states that "what can be explained by fewer principles is needlessly explained by more" (Jones, 1952, p. 620). It is also expected that an understanding of the role of small group

leadership self-efficacy in leadership outcomes will be clearer with a better understanding of the construct space extant measures of leadership self-efficacy claim to explain.

Bandwidth-Fidelity Dilemma

Another important issue is the notion of bandwidth-fidelity, which is the alignment of the specificity (broad or narrow) of predictor and criterion variables (Cronbach & Gleser, 1957). Broad or omnibus measures assess broad constructs (e.g., the Personality Assessment Inventory) whereas narrow measures capture specific facets of the construct (e.g., the Rosenberg Self-Esteem Scale; Smith & Archer, 2014). Whereas some researchers argue that broad constructs are applicable (e.g., Ones & Viswesvaran, 1996), a number of researchers recommend more fine-grained measurement (e.g., Fullerton, 2014) because lower-level or narrow traits gain fidelity, allowing them to better predict more specific behavioral patterns (Paunonen, 1998), although broad bandwidth may be lost. Because empirical studies have found that global constructs predict broad or general behaviors only moderately while narrow or specific constructs predict limited behaviors with a high degree of validity (Hampson, John, & Goldberg, 1986), some researchers argue for the use of specific constructs instead of broad constructs in the prediction of narrow or specific criteria in order to enhance validity (e.g., Hogan & Roberts, 1996).

For example, Tett, Steele, and Beauregard (2003) supported the use of narrow measures over broad measures for personality research. Specifically, Tett et al. found that specific measures had higher predictive value than broad measures. They also

found that narrow constructs were useful in explaining results at the general level. That is even when broad constructs were used, it is useful to understand the specific constructs that underlie the general links because in both of their studies, broad constructs obscured important linkages among narrow constructs. There are numerous additional examples of narrow constructs outperforming broad personality constructs in literature (refer to Briley and Tucker-Drob [2013] for an in-depth review).

Issues of bandwidth and specificity play a role in the incremental predictive validity to be gained with the small group leadership self-efficacy construct, because it is a specific predictor which is best matched with specific criteria. Reliance on broader leadership self-efficacy with greater "bandwidth" may mask important differences in the theoretical mechanisms linking leadership self-efficacy to outcomes. Hence, measures of leadership self-efficacy, a global construct with broad bandwidths, would only permit the moderate prediction of broad or general leadership outcomes and would be contaminated with irrelevant factors/dimensions for the prediction of outcomes in a small group leadership context. This is expected given that the task specificity of self-efficacy warrants a specific criterion domain. Consistent with this notion and the majority of research results on the bandwidth-fidelity debate, and inherent in the nature of small group leadership self-efficacy, the present study focused on small group leadership self-efficacy as a narrow self-efficacy variable.

Thus, the present study seeks to determine whether the small group leadership self-efficacy measure contributes any incremental validity to the prediction of specified

outcomes over and above what can be predicted by other measures. Consequently, the following is proposed:

Hypothesis 9: The small group leadership self-efficacy measure will have incremental validity in predicting (a) leadership effectiveness in a small group, and (b) potential small group leadership role assumption, over and above Paglis and Green's (2002) leadership self-efficacy measure.

Hypothesis 10: The small group leadership self-efficacy measure will have incremental validity in predicting (a) leadership effectiveness in a small group, and (b) potential small group leadership role assumption, over and above the generic self-efficacy measure.

The Present Study

Validity was examined using data from five samples from four different contexts: Corps of Cadets students, management graduate students, a student cohort in a leadership institute, and staff members in a leadership forum. Construct-related validity was investigated by relating small group leadership self-efficacy scores to hedonism and continuance commitment. Criterion-related validity was examined by relating small group leadership self-efficacy to other ratings of effective leadership behaviors, willingness to assume a leadership role, the length of a training program, and the effectiveness of a leadership training program based on pretraining and posttraining scores. Finally, incremental validity was investigated by comparing the predictive validity of the small group leadership self-efficacy scores with those derived from Paglis

and Green's (2002) leadership self-efficacy measure and the generic self-efficacy measure. Table 3 presents a list of the study hypotheses and research question.

Table 3
List of All Study Hypotheses and Research Question

	Study Hypotheses
H1	The two-factor structure of the small group leadership self-efficacy measure obtained by Asenuga (2012) will be replicated in a new sample of participants.
H2	The small group leadership self-efficacy measure will be positively related to (a) Paglis and Green's (2002) leadership self-efficacy measure, and (b) the generic self-efficacy measure.
H3	Small group leadership self-efficacy will have negative (close to zero) relationship with (a) hedonism, and close to zero relationship with (b) continuance commitment.
H4	Posttraining small group leadership self-efficacy will be positively related to effective leadership behaviors in a leadership role in a small group.
H5	Posttraining small group leadership self-efficacy will be positively related to the willingness to assume a leadership role in a small group.
H6	Trainees will show an increase in small group leadership self-efficacy after completing a leadership training program.
H7	Trainees who were enrolled in lengthy training programs will show a greater degree of small group leadership self-efficacy score improvement than those enrolled in less lengthy training programs.
H8	Training length will moderate the relationship between posttraining small group leadership self-efficacy scores and (a) other ratings of leadership effectiveness, and (b) potential leadership role assumption, such that the relationship will be stronger in longer training programs than in shorter training programs.
H9	The small group leadership self-efficacy measure will have incremental validity in predicting (a) leadership effectiveness in a small group and (b) potential small group leadership role assumption, over and above Paglis and Green's (2002) leadership self-efficacy measure.

Table 3 Continued

	Study Hypotheses
H10	The small group leadership self-efficacy measure will have incremental validity in predicting (a) leadership effectiveness in a small group and (b) potential small group leadership role assumption, over and above the generic self-efficacy measure.
RQ	Is the self-efficacy → performance relationship stronger than the performance → self-efficacy relationship?

CHAPTER II

METHOD

Participants

Five groups of participants who were enrolled in a leadership training program or course were recruited from a large Carnegie Mellon Tier I Research university and a private, four-year Liberal Arts College. The final sample consisted of students or staff members who were enrolled in the following programs: Corps of Cadets leadership program (n = 1,109), Corps of Cadets leadership course (n = 177), graduate leadership course for management students (n = 67), leadership forum for staff members (n = 7), and a leadership institute for students (n = 64). Participants were recruited specifically for the goals of the present study except for the Corps of Cadets leadership program participants who were an opportunistic sample. Table 4 presents an overview of the sample composition and a description of the leadership programs that differentiate the groups. The final sample consisted of 831 males and 205 females with a mean age of 21 years (SD = 5.26). Participants who did not provide complete responses to the small group leadership self-efficacy measure and for whom the imputation of scores was unjustifiable (i.e., those who responded to less than 50% of all survey items) were omitted from data analyses. Screening the data for careless responding resulted in the deletion of 113 participants (7.35%), thus, reducing the final sample size to 1,424. Participation was voluntary and the participants enrolled in the Corps of Cadets

Table 4
Overview of Sample Composition

	Training Program Description	Length	*n*
Corps of Cadets	This program is aimed at developing leaders of character. Cadets learn leadership through participation in both military and civilian environments. Depending on academic level, they are trained to lead as commanders, mentors, and executive leaders. Their membership in the Corps also makes them eligible to qualify for a leadership studies certificate.	1 Year	1,109
Leadership Course I (Mgt.)	This leadership course, titled "Leadership in Organizations," is designed for management graduate students and is offered by the management school. It seeks to introduce students to evidence-based approach to leadership, leadership development, leadership styles and procedures, leadership methods, and ethical leadership.	14 weeks	67
Leadership Course II (CoC)	This leadership course, titled "The Fundamentals of Peer Leadership," is designed for Corps of Cadets and is offered by the school of military sciences. It seeks to introduce students to the theories of peer leadership, leadership styles, small group communication, basic supervisory skills, and performance evaluation.	14 weeks	177
Leadership institute	The program in a university leadership center pairs leadership coaches with students who are interested in developing their leadership knowledge and skills. Students develop their leadership skills through self-assessment, interactive workshops, practical experience, and public presentations.	1 Year	67
Leadership forum	This program introduces staff participants to the complexities of leading work groups while maintaining a balance between task and relationship skills. Participants are informed about strategies for managing group dynamics, tools for guiding group process, developing effective organizational environments, and dealing successfully with change.	2 weeks[a]	7

Note. [a] 4-day training spread across two weeks. Mgt = Management; CoC = Corps of Cadets.

leadership program received a reward, which is a chance to be exempt from one morning of Corps activities.

Before the data were collected, a power analysis was conducted to determine the minimum number of cases needed to exhibit adequate power for the hierarchical regression analysis used to test the incremental validity of the measure. The power analysis conducted utilizing G*Power v3.1.9.2 (Faul, Eerdfelder, Buchner, & Lang, 2009) revealed that 395 valid responses is needed to have a power of 0.80 to detect a small effect ($R^2 = 0.02$)[2] with an alpha level (p) of 0.05. Additional responses, exceeding the 395 requirement of the power analysis, was sought to ensure that the present study had a sufficient sample size to detect medium effects, if they exist, and to allow the deletion of cases due to missing data.

Measures

Small Group Leadership Self-Efficacy

Small group leadership self-efficacy was assessed using Asenuga's (2012) 23-item measure which assessed two dimensions of small group leadership self-efficacy—initiating structure (12 items) and consideration (11 items). Participants rated their confidence in performing the leadership behaviors on a five-point Likert scale (1 = not confident at all; 5 = very confident). "Create an emotionally safe climate for group members to openly discuss any issue related to your group's success" is a sample item on the measure. Pretraining and posttraining scores were averaged independently, such that

[2] Converted from Cohen's (1992) f^2 of 0.02 which is defined in terms of squared multiple correlation (R^2).

higher average scores indicate higher small group leadership self-efficacy. A Cronbach's alpha coefficient of .95 was obtained for both Time 1 and Time 2. A complete listing of the items appears in Appendix A (with the first 12 items assessing initiating structure).

Leadership Self-Efficacy

The 12-item Paglis and Green (2002) measure about participants' self-efficacy beliefs in areas that covered direction-setting, gaining commitment, and overcoming obstacles was administered (see Appendix B). A sample item reads: "I can figure out ways for my group to solve any policy or procedural problems hindering our change efforts." Pretraining and posttraining responses were collected on a 5-point Likert scale ranging from 1 (not at all confident) to 5 (completely confident). Cronbach alpha of .93 was reported in a previous study (Cho, Harrist, Steele, & Murn, 2015) and .91 was obtained across both times in the present study.

Generic Self-Efficacy

Items measuring generic self-efficacy were adapted from previous measures of self-efficacy based on Bandura's (1997) guidelines. Items were reworded to focus on the small group leadership context (see Appendix C). Pretraining and posttraining responses to six items administered on a 5-point scale Likert scale (1 = strongly disagree; 5 = strongly agree) were collected. "I feel confident in my ability to perform effectively as a small group leader" is a sample item. A Cronbach alpha of .87 and .90 was obtained for Time 1 and Time 2, respectively.

Hedonism

Two items administered on a 6-point Likert scale (1 = not like me at all; 6 = very much like me) from the Portrait Values Questionnaire (PVQ) were used to assess hedonism (Schwartz et al., 2001). "He seeks every chance he can to have fun. It is important to him to do things that gives him pleasure" is a sample item participants completed in reference to the hedonistic values of others (see Appendix D). Although inter-item correlation is a more appropriate reliability estimate for a two-item measure, no previous study reported this metric. Hence, the present study examined its inter-item correlation in addition the reported .80 Cronbach alpha (Cieciuch & Schwartz, 2012). An inter-item correlation of .62 and .64 was found for Time 1 and Time 2, respectively.

Continuance Commitment

Three items administered on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree) from Gellatly, Meyer, and Luchak's (2006) continuance commitment measure were used to request responses from the Corps of Cadets participants. They reported an alpha coefficient of .77. A sample item is "I feel that I have too few options to consider leaving this organization right now." Appendix E contains the complete item list. Internal consistency reliability estimates of .68 and .76 were obtained for Time 1 and Time 2, respectively.

Training Length

Training length, operationalized as the length of the training program in days, was one aspect of training context the present study explored. Training length ranged from two weeks to one year.

Leadership Effectiveness

To eliminate alternative explanations which could arise from common method bias such as acquiescence and social desirability (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), a 6-item other-reports of leadership effectiveness was collected (cf. Giessner & van Knippenberg, 2008). One or more colleagues, who were nominated by participants, reported their observation of the target participant's leadership effectiveness approximately six weeks after completing the training program. The peer raters were informed that their responses would be confidential. The measure was administered using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item from the measure is: "This group leader is very effective." A composite leadership effectiveness score was computed by averaging responses to the six items. Scores derived from this measure have been shown to have good internal consistency with coefficient alphas of .89 and confirmatory factor analyses supported a unidimensional factor structure (Giessner & van Knippenberg, 2008). The present study obtained an alpha of .94. Appendix F contains the email sent to the colleagues that participants nominated while Appendix G documents the leadership effectiveness measure.

Leadership Role Acceptance

A vignette was used to measure leadership role acceptance. This was deemed to be appropriate because a vignette contextualizes the construct and it was reasoned that it would make it easier for participants to elicit their own leadership. As a criterion measure, participants responded to a short vignette describing a leadership scenario.

This vignette, which was developed specifically for the present study, describes a work-setting where the self-nomination and acceptance of a leadership role in a small group is required (see Appendix H). Participants reported whether or not they would accept this leadership role. To avoid priming effects, this vignette was presented before the other measures. A binary scale—1 for participants choosing to assume a leadership role and 0 for those who did not—was used.

An overview of the measures and, thus, data collected from each sample is presented in Table 5.

Procedure

Around the first week of the program, all participants were administered demographic measures (previous leadership experience [see Appendix I], age, and sex), measures of small group leadership self-efficacy, leadership self-efficacy (Paglis & Green, 2002), generic self-efficacy (Bandura, 1997), hedonism, and continuance commitment all of which required a total of about 30 minutes to complete via Qualtrics, an online survey tool. Around the last week of training (see Table 4), all participants were asked to complete these measures a second time. Furthermore, their willingness to accept a leadership role was gathered and multi-source ratings of their display of effective leadership behaviors were solicited (with the consent of the participants) from the colleagues they nominated.

Data Analysis

The data were reviewed for careless responding and cleaned prior to performing any statistical analyses which resulted in the elimination of the 113 cases previously

Table 5
Overview of Measures Collected, by Sample

Measure	Corps of Cadets		Leadership Course I (Mgt)		Leadership Course II (CoC)		Leadership Institute	Leadership Forum
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 1
Demographic measures	X	X	X	X	X	X		X
Small group LSE	X	X	X	X	X	X	X	X
Paglis and Green LSE			X	X	X	X	X	X
Generic self-efficacy			X	X	X	X	X	X
Hedonism	X	X						
Continuance commitment	X	X						
Training length	X	X	X	X	X	X	X	X
Leadership effectiveness			X	X	X	X		
Leadership role acceptance			X	X	X	X		X

Note. LSE = leadership self-efficacy; Mgt = Management; CoC = Corps of Cadets.

noted in the *Participants* section. Specifically, participants' responses were deemed careless when (a) an insufficient effort was observed through the completion of less than 50% of the survey items, (b) a consistent or the same response was observed across all items, (c) a very short time to online survey completion was recorded, and/or (d) only criterion data were available. A series of data analyses, using SPSS (v. 24), MPLUS (v. 7.4; Muthén & Muthén, 2015), and calculators in Excel, were then conducted.

Missing Data

Missing data are pervasive in behavioral research and are a threat to validity (Allison, 2002). Because the present study collected data at two time points, missingness was anticipated due to attrition and from non-response to individual measure items (Nakai & Ke, 2011). Missing data patterns were analyzed and it was anticipated that data will be missing at random, that is missing data are unrelated to the phenomena being studied (Little, Jorgensen, Lang, & Moore, 2014), because no variable that systematically increases missing values in another variable was included in the present study.

To reduce bias and avoid invalid statistical inferences due to missing data and to maximize the use of available data, missing values were imputed using the multiple imputation procedure (Fichman & Cummings, 2003; Schafer, 1999). Multiple imputation is a statistical procedure in which various imputations are generated (in this case, 5 imputations after 200 iterations) for each missing predictor data point. Subsequent data analyses was then conducted using the pooled dataset averaged from

the 5 imputation datasets. Missing values for each participant were imputed only when the participant completed at least 80% of the items in a specific measure.

Inter-Rater Reliability and Agreement

The inter-rater agreement and reliability of aggregated (mean) ratings for each focal participant's leadership effectiveness by multiple raters was investigated by computing both the average deviation (AD) index and intraclass correlation (ICC). Because each ratee was evaluated by different raters who were randomly selected from the population of raters, the most appropriate inter-rater reliability statistic is ICC(1) using a one-way, rather than two-way, random effects model where only people (rater) effects are random. An ICC of .70 and above is used to infer that reliability is adequate (Klein et al., 2000).

The AD index of inter-rater agreement which represents the overall degree to which raters deviated from the average (mean) rating assigned to each focal participant (Burke & Dunlap, 2002) was computed. The AD index rather than the traditionally reported r_{wg} index was used because it not only is a pragmatic index that estimates inter-rater agreement in terms of the metric of the original scale but it also does not necessitate an explicit modeling of a random response variance. The formula used to estimate the AD index is: $AD_{M(j)} = (\sum |x_{jk} - x_j|) / N$, where *N* refers to the number of raters for an item *j*; x_{jk} is the *k*th rater's rating on item *j*; and x_j is the mean of the raters' scores on item *j* (Burke & Dunlap, 2002). Low values of AD represent low deviations, overall, from the average rating assigned to a participant and, therefore, high inter-rater agreement. According to the guidelines for interpreting AD values described by Burke and Dunlap

(2002), the practical upper limit criterion is *c*/6 (where *c* is the number of response options in the scale). In the present study, AD values below 0.83 (i.e., 5/6) indicated acceptable inter-rater agreement.

CHAPTER III

RESULTS

Analysis and Treating Missing Data Patterns

The percentage of the missing data ranged from 23.9% to 94.5% for each measure item. Although 261 participants (18.33%) completed both Time 1 and Time 2, 1,156 participants (81.18%) did not participate in one wave of data collection. However, only 86 participants (6.04%) had other ratings of leadership behavior data. Given the extent of missing values in the dataset, specifically 63% of the total number of values, patterns of missingness (see Table 6) were examined among all participants who provided responses at either Time 1 or Time 2. The nonsignificant result of Little's (1988) missing completely at random test ($\chi^2_{[2829]} = 2710.33$, $p > .05$) upheld the assumption that those values were missing completely at random. Hence, because missing data were not based on a hidden systematic pattern, the multiple imputation method was applied to deal with them.

To ensure that the loss of participants did not bias the results, dropouts were compared with those who completed both waves on their baseline small group leadership self-efficacy. Results indicated no significant difference, $t(1082) = .23$, $p > .05$, $d = 0.02$. Hence, multiple imputation by Markov Chain Monte Carlo method (Schafer, 1999) was used to create five random imputation data sets with no missing values. This was done for predictor measures for participants who responded to a minimum of 50% of the items.

Table 6
Pattern of Missingness

Variable	Frequency	%	Imputation[A]
Small group leadership self-efficacy			Yes
Time 1	333	24	
Time 2	823	58	
Paglis leadership self-efficacy			Yes
Time 1	1,164	82	
Time 2	1,336	94	
Generic self-efficacy (Bandura)			Yes
Time 1	1,167	82	
Time 2	1,337	94	
Continuance commitment			No
Time 1	590	42	
Time 2	896	63	
Hedonism			No
Time 1	588	41	
Time 2	891	63	
Leader role acceptance			No
Time 1	1,237	87	
Time 2	1,336	94	
Leadership behavior (other ratings)	1,331	94	No

Note. [A]Missing data for a participant were imputed only when he/she completed at least 80% of the items in a specific measure.

Inter-Rater Reliability

An ICC(1) of the average leadership behavior ratings of .79 ($p < .001$, 95% CI: 51, .91) indicated inter-rater reliability. However, this is a conservative underestimate of the "true" reliability given the uneven rater structure (raters ranging from 1 to 3) in the present study. The AD index for each rater was further computed. The mean AD of .25 ($SD = 0.06$) was below the 0.83 acceptable guideline and indicative of high agreement.

Thus, it was fitting to aggregate leadership behavior scores across raters. Table 7 presents these results.

Table 7
Interrater Agreement and Reliability for Raters of Leadership Behavior

Measure	Rating		AD	ICC(1)
	Average	*SD*		
Scale			0.25	.79
Individual items				
This group leader is an excellent leader.	4.35	0.76	0.28	
This group leader is very effective.	4.42	0.70	0.25	
This group leader leads the group in a way which motivates the members.	4.38	0.75	0.28	
I like working together with this group leader.	4.60	0.69	0.14	
This group leader is a good team leader.	4.44	0.70	0.31	
This leader will be successful in future tasks.	4.65	0.62	0.22	

Note. $N = 24$. *SD* = standard deviation; AD = average deviation; ICC = intraclass correlation. All average deviation values were below the acceptable agreement guideline of 0.83 (Burke & Dunlap, 2002).

Hypothesis Testing

Means, standard deviations, reliabilities, and correlations of all study variables are presented in Table 8[3]. Because training length differed across the five samples, it was controlled for, whenever possible, when testing hypotheses that were unrelated to training length.

To test Hypothesis 1, a confirmatory factor analysis (CFA) using MPLUS was conducted on the small group leadership self-efficacy measure to confirm that the two

[3] Supplemental subgroup difference scores are presented in Appendix J to make them available to future researchers who might be interested in them, Appendix J reports the results broken down by sex.

Table 8

Descriptive Statistics and Zero-order Correlations for All Study Variables

	Variable	*N*	*M*	*SD*	1	1a	1b	2	3	4	5	6	7	8	-
Time 1															
1.	Small group LSE	1084	3.97	0.63	(.95)										
	a) Initiating structure	1084	3.86	0.70	.89*	(.93)									
	b) Consideration	1084	4.10	0.73	.88*	.57*	(.94)								
2.	Paglis LSE measure	256	3.90	0.62	.86*	.86*	.64*	(.91)							
3.	Generic SE measure	256	4.08	0.62	.79*	.82*	.57*	.84*	(.89)						
4.	Hedonism	828	4.15	1.12	.11*	.07*	.13*	-	-	(.62)					
5.	Continuance commitment	828	5.14	1.45	.12*	.12*	.17*	-	-	-.04	(.68)				
6.	Training length[a]	1424	226	73	-.09*	-.11*	-.05	-.15*	-.03	-	-	–			
7.	Previous experience amount	211	2.86	1.28	.13	.15*	.07	.16*	.20*	-	-	-.02	–		
8.	Leadership role acceptance[b]	180	.97	0.18	.17*	.11	.20*	.11	.12	-	-	.12		–	

		N	*M*	*SD*	1	1a	1b	2	3	4	5	6	7	8	9
Time 2															
1.	Small group LSE	594	4.16	0.57	(.95)										
	a) Initiating structure	594	4.13	0.60	.91*	(.93)									
	b) Consideration	594	4.19	0.64	.91*	.65*	(.93)								
2.	Paglis LSE measure	81	4.08	0.54	.86*	.84*	.72*	(.91)							
3.	Generic SE measure	81	4.20	0.59	.79*	.80*	.65*	.75*	(.90)						
4.	Hedonism	513	4.19	1.12	.17*	.09*	.24*	-	-	(.64)					
5.	Continuance commitment	513	4.92	1.52	-.01	-.03	.01	-	-	.07	(.76)				
6.	Training length[a]	594	226	73	-.05	-.01	-.08	-	-	-	-	–			
7.	Previous experience amount	67	2.82	1.47	.10	.11	.07	-.07	.05	-	-	.12	–		
8.	Leadership role acceptance[b]	81	.83	0.38	.15	.13	.14	.22*	.18	-	-	-		–	
9.	Leadership behavior (other)	89	4.50	0.64	.38	.23	.43*	.22	.46*	-	-	-		.15	(.94)

Note. LSE = leadership self-efficacy; SE = self-efficacy. [a] Training length is in days. [b] Leadership role acceptance was coded as: 0 = not willing to accept, 1 = willing to accept. Reliability coefficients are displayed along the diagonal. *$p < .05$. All tests are two-tailed.

factors proposed (initiating structure and consideration) underlie small group leadership self-efficacy. This was also used to test the posited model fit. Comparative fit index (CFI) higher than .90, root mean-square error of approximation (RMSEA) lower than .08, standardized root mean square residual (SRMR) lower than .08, and a significant chi-square statistic (χ^2/df) indicates an acceptable fit (Hu & Bentler, 1999). The CFA using the robust maximum likelihood estimator revealed a good fit to the data for both Time 1 ($\chi 2_{[229]} = 1417.65$; CFI = .90; SRMR = .048; RMSEA = .07) and Time 2 data ($\chi 2_{[229]} = 693.53$; CFI = .92; SRMR = .049; RMSEA = .06). Thus, Hypothesis 1 was supported.

To test Hypotheses 2 to 5, partial correlations were conducted to ensure that training length was controlled for as a potential covariate, whenever possible; otherwise, Pearson correlations were used. Hypothesis 2(a) proposed that the small group leadership self-efficacy measure will be positively related to Paglis and Green's (2002) leadership self-efficacy measure. Partial correlations revealed that small group leadership self-efficacy measure was significantly and positively related to Paglis and Green's measure (Time 1: $r = .92$, $p < .001$, 95% CI = .90, .94; Time 2: $r = .88$, $p < .001$, 95% CI = .82, .92). Thus, Hypothesis 2 was supported. Furthermore Hypothesis 2(b) posited that the small group leadership self-efficacy measure will be positively related to the generic self-efficacy measure. Partial correlations also revealed that the small group leadership self-efficacy measure was significantly and positively related to the generic self-efficacy measure (Time 1: $r = .76$, $p < .001$, 95% CI = .70, .81; Time 2: $r = .82$, $p < .001$, 95% CI = .73, .88). Although the result of Hypothesis 2 above provides evidence

of convergent validity, the relationships between small group leadership self-efficacy and the alternative measures are very high, almost unity after correcting for attenuation. Thus, it is important to demonstrate that the small group leadership self-efficacy measure does not converge with either measure to the point of redundancy. Thus, an exploratory analysis was conducted to determine whether small group leadership self-efficacy was correlated highly enough to be considered the same with either the leadership self-efficacy measure or the generic self-efficacy measure.

Subsequently, two competing CFA models were tested as a robust test of discriminant validity. The first (target) model consisted of two latent constructs (i.e., a second-order small group leadership self-efficacy and a first-order leadership self-efficacy construct or generic self-efficacy construct) where all constructs were distinct and allowed to correlate freely. The second, alternative, model constrained and set the correlation between the constructs to unity (1.00). A significantly lower chi-square value for the model differentiating between the target and discriminant constructs would indicate that the constructs are not perfectly correlated with and are distinguishable from small group leadership self-efficacy (Anderson & Gerbing, 1988). The significant chi-square difference values across both alternative or discriminant constructs (see Table 9) provides evidence that the small group leadership self-efficacy construct is distinct from both the leadership self-efficacy construct (Paglis & Green, 2002) and the generic self-efficacy measure.

Hypothesis 3a proposed that small group leadership self-efficacy will have an inverse relationship with hedonism. The Pearson correlation at Time 1 ($r = .11$, $p < .01$,

Table 9
Construct-Related Validity: Discriminant Validity Testing

Construct and test	χ^2	*df*	CFI	SRMR	RMSEA	Δdf	$\Delta\chi^2$
Paglis LSE							
Target (T1)	878.65	558	.84	.09	.05 [.04,.05]		
Alternative	919.22	561	.83	.60	.05 [.04, .06]	3	76.85*
Target (T2)	718.23	558	.71	.10	.06 [.05, .07]		
Alternative	731.63	561	.69	.81	.06 [.05, .06]	3	41.73*
GSE (Bandura)							
Target (T1)	522.00	375	.91	.06	.04 [.03, .05]		
Alternative	564.40	378	.89	.62	.04 [.04, .05]	3	73.13*
Target (T2)	482.13	375	.78	.09	.06 [.04, .07]		
Alternative	495.94	378	.76	.78	.06 [.05, .08]	3	33.73*
Hedonism							
Target (T1)	1074.98	274	.89	.05	.06 [.06, .06]		
Alternative	1462.13	277	.83	.60	.07 [.07, .08]	3	859.37*
Target (T2)	523.83	274	.93	.05	.04 [.04, .05]		
Alternative	758.67	277	.87	.73	.06 [.05, .06]	3	365.27*
Commitment							
Target (T1)	1128.72	297	.88	.06	.06 [.06, .06]		
Alternative	1469.86	300	.84	.46	.07 [.07, .07]	3	644.66*
Target (T2)	550.90	297	.93	.05	.04 [.04, .05]		
Alternative	871.92	300	.85	.62	.06 [.06, .07]	3	502.083*

Note. LSE = leadership self-efficacy; *df* = degrees of freedom; CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root-mean-square error of approximation; χ^2 = chi-square. The chi-square difference tests is compared against the respective Target CFA. * $p < .05$.

95% CI = .04, .18) and at Time 2 ($r = .18$, $p < .01$, 95% CI = .10, .26) were both positive, hence, the hypothesis was not supported. Hypothesis 3b posited that small group leadership self-efficacy will have a close to zero relationship with continuance commitment. Pearson correlations confirmed this as small group leadership self-efficacy had a weak relationship with continuance commitment at Time 1 ($r = .16$, $p < .01$, 95%

CI = .09, .23) while having a nonsignificant negative relationship at Time 2 ($r = -.01$, $p > .05$).

In addition to construct intercorrelations, a more rigorous test of construct-related validity was used. Fornell and Larcker's (1981) discriminant test is used to determine if two constructs are different. Discriminant validity is achieved when the average squared factor loading or the average variance extracted (AVE) of each indicator on its respective latent construct is higher than the shared variance (that is, squared correlation or SV) between the two latent constructs. This test is also called the AVE-SV method. The results indicated that the AVE for both small group leadership self-efficacy and hedonism was significantly higher than their squared correlation at Time 1 (.59 > .02) and Time 2 (.56 > .05). For commitment, the AVE was also significantly higher than the squared correlation at both Time 1 (.58 > .03) and Time 2 (.55 > .00). The results of a supplemental discriminant validity test, using CFA models, also confirmed the results obtained using the AVE-SV method (see Table 9). Together, these results provide evidence of discriminant validity and support for Hypothesis 3 (a, b).

Hypothesis 4 predicted that posttraining small group leadership self-efficacy will be positively related to effective leadership behaviors in a small group leadership role. Partial correlations, controlling for both training length and pretraining score, revealed a nonsignificant relationship between posttraining small group leadership self-efficacy and effective leadership behavior ($r = .40$, $p > .05$). To further examine this hypothesis, the magnitude of efficacy change or small group leadership self-efficacy score gains (d) resulting from pretraining and posttraining scores was computed and correlated with the

effective leadership behavior. Hence, a partial correlation of the magnitude of small group leadership self-efficacy change and leadership behavior was conducted and the result was also nonsignificant ($r = .40$, $p > .05$). Although the power of .56 was not sufficient to detect small to moderate effects in the small sample ($N = 27$), the direction of the effect was positive for leadership behavior.

In testing Hypothesis 5 which proposed a positive relationship between posttraining small group leadership self-efficacy and the willingness to accept a leadership role in a small group, binary logistic regression was conducted due to dichotomous nature of the dependent variable. The result indicated that posttraining small group leadership self-efficacy was not significantly related to the likelihood that a participant would be willing to accept a leadership role ($B = -.74$, Wald $\chi^2_{[1]} = 1.72$, odds ratio [OR] = .48, $p > .05$).

A paired samples *t*-test was used to test Hypothesis 6 regarding an increase in small group leadership self-efficacy due to training. The results confirmed the hypothesis ($t[260] = 6.48$, $p < .001$, $d = 0.36$). Participants small group leadership self-efficacy scores at Time 2 ($M = 4.18$, $SD = 0.55$) were significantly higher than their pretraining scores ($M = 3.97$, $SD = 0.63$). See Table 10 for pretraining and posttraining standardized mean differences for the different participant groups.

Before the data were subjected to analysis of covariance (ANCOVA) to test Hypothesis 7, the assumption of homogeneity of regression slopes was tested. The assumption was met as evidenced in the nonsignificant pretraining by training length interaction. Pretraining small group leadership self-efficacy was used as the covariate as

it reached statistical significance in most of the predictions. Using pretraining scores as a covariate adjusts for prior differences among participants and ensures that posttraining score differences could be attributed to the training. Additionally, this is a preferred method for detecting changes resulting from training interventions because it strengthens internal and statistical conclusion validities (Goldstein, 1986). Results of the ANCOVA revealed that there was no significant effect of training length on small group leadership self-efficacy score improvement, $F(1, 258) = .12$, $p > .05$, $\eta^2 = .00$. Thus, Hypothesis 7 was not supported.

Table 10
Small Group Leadership Self-Efficacy Standardized Mean Difference by Participant Groups

		Time 1		Time 2			
Construct and Groups	*N*	*M*	*SD*	*M*	*SD*	*r*	*d*
Small group leadership SE	261	3.97	0.63	4.18	0.55	.59*	0.36*
Corps of Cadets	232	3.95	0.63	4.18	0.57	.58*	0.37*
Leadership course I (Mgt)	16	3.94	0.48	4.14	0.39	.55*	0.46
Leadership course II (CoC)	13	4.19	0.63	4.23	0.49	.82*	0.13
Leadership institute	64	4.04	0.48	-	-	-	-
Leadership forum	7	3.81	0.77	-	-	-	-

Note. SE = Self-efficacy; Mgt = Management; CoC = Corps of Cadets. *ds* were computed with Time 2 as the "experimental" condition; hence positive *ds* reflect higher Time 2 means. *$p < 0.05$ (one-tailed).

Although an attempt was made to conduct regression analyses to investigate the moderator effect of training length on the relationship proposed in Hypothesis 8 (a, b),

the lack of outcome data for participants who were enrolled in a training program different from the 14-week sample groups made the initial attempt impossible. However, a supplemental analysis was undertaken solely with the groups with outcome data as it was reasoned that the two programs differed in their learning objectives as one focused on peer leadership (small group) while the other focused on large organization leadership (large group). This difference was used to posit training objective as an alternative moderator variable. Hence, the posttraining small group leadership self-efficacy construct was centered and the training objective variable was dummy coded (0 = leadership course I; 1 = leadership course II) before computing the interaction terms in an effort to make the results interpretable and to correct for multicollinearity (Aiken & West, 1991). The result indicated that there was no significant incremental contribution of the posttraining small group leadership self-efficacy × training objective cross product term after controlling for the main effects of posttraining small group leadership self-efficacy and training objective (β = -.90, $p > .05$). Hence, the results did not support the supplemental analysis (see Table 11).

Similarly, logistic regression was used to test Hypothesis 8(b) and the results indicated that training objective did not significantly moderate the relationship between posttraining small group leadership self-efficacy and the likelihood to accept a leader role (B = 2.63, Wald $\chi^2_{[1]}$ = .00, odds ratio [OR] = 13.86, $p > .05$). This is presented on Table 12.

Table 11
Multiple Regression for Interaction Effects between Posttraining Small Group Leadership Self-Efficacy and Training Objective in the Prediction of Leadership Behavior

	Leadership Behavior								
	Model 1			Model 2			Model 3		
Variables	*B*	*SE*	β	*B*	*SE*	β	*B*	*SE*	β
Control									
Pretraining SGLSE	.11	.23	.13	-.04	.20	-.05	.04	.18	.05
Main effects									
Posttraining SGLSE				.58	.40	.38	1.78	.67	1.18*
Training objective[a]				.43	.25	.44	.22	.24	.22
Interaction									
Post. SGLSE*Objective							-1.64	.79	-.90
F			.21			2.53			3.61
R^2			.02			.43			.62
Adjusted R^2			-.07			.26			.45
ΔR^2						.42			.18

Note. *N* = 28. SGLSE = small group leadership self-efficacy; Post = posttraining. [a] Dummy variable (1 = leadership course I, 0 = leadership course II). * $p < .05$.

In spite of the high intercorrelations, Hypotheses 9 and 10 which pertained to the incremental validity of small group leadership self-efficacy above and beyond the Paglis and Green (2002) leadership self-efficacy measure and generic self-efficacy measure were tested using hierarchical regression analysis. For Hypothesis 9a, pretraining was entered in Step 1 as a control variable, the leadership self-efficacy measure was entered in Step 2, and posttraining small group leadership self-efficacy was entered into the equation in Step 3. The results, presented in Table 13, shows that neither the leadership self-efficacy measure ($\beta = .34$, $p > .05$) nor posttraining small group leadership self-efficacy significantly predicted leadership behavior ($\beta = .50$, $p > .05$). After accounting for variance in the leadership self-efficacy measure, small group leadership self-efficacy

Table 12

Logistic Regression for Interaction Effect between Posttraining Small Group Leadership Self-Efficacy and Training Objective in the Likelihood to Accept a Leadership Role

	Leadership Role Acceptance								
	Model 1			Model 2			Model 3		
Variables	*B*	*SE*	*OR*	*B*	*SE*	*OR*	*B*	*SE*	*OR*
Control									
Pretraining	1.26	1.33	3.54	-.80	2.61	.45	-.80	2.61	.45
Main effects									
Posttraining				3.44	2.72	31.18	.81	2319	2.25
Objective[a]				19.12	1075	2011	18394	1195	1680
Interaction									
Posttraining* Objective							2.63	2319	13.86
-2 Log likelihood			13.47			8.97			8.97
Model χ^2 (df)			.94			5.44			5.44
H-L Test			5.08			7.82			7.82
Nagelkerke R^2			.08			.44			.44

Note. $N = 28$. *B* = unstandardized logistic regression coefficients; SE = standard error of the coefficient; OR = odds ratio; H-L = Hosmer–Lemeshow goodness of fit test. [a] Dummy variable (1 = Leadership course I, 0 = leadership course II). * $p < .05$.

did not account for additional variance in the prediction of leadership behavior, $\Delta R^2 = .17$, $p > .05$. It is worthy of note that although this relationship was not significant, the trend in the ΔR^2 was consistently larger for posttraining small group leadership self-efficacy even when it was entered into the regression equation second.

In spite of the high intercorrelations, Hypotheses 9 and 10 which pertained to the incremental validity of small group leadership self-efficacy above and beyond the Paglis and Green (2002) leadership self-efficacy measure and generic self-efficacy measure were tested using hierarchical regression analysis. For Hypothesis 9a, pretraining was entered in Step 1 as a control variable, the leadership self-efficacy measure was entered

in Step 2, and posttraining small group leadership self-efficacy was entered into the equation in Step 3. The results, presented in Table 13, shows that neither the leadership self-efficacy measure (β = .34, p > .05) nor posttraining small group leadership self-efficacy significantly predicted leadership behavior (β = .50, p > .05). After accounting for variance in the leadership self-efficacy measure, small group leadership self-efficacy did not account for additional variance in the prediction of leadership behavior, ΔR^2 = .17, p > .05. It is worthy of note that although this relationship was not significant, the trend in the ΔR^2 was consistently larger for posttraining small group leadership self-efficacy even when it was entered into the regression equation second.

Table 13
Hierarchical Regression for the Incremental Validity of Small Group Leadership Self-Efficacy over Paglis and Green's (2002) Leadership Self-Efficacy in the Prediction of Leader Behavior

	Leadership Behavior								
	Model 1			Model 2			Model 3		
Variables	*B*	*SE*	β	*B*	*SE*	β	*B*	*SE*	β
Control									
Pretraining small group LSE	.11	.23	.13	-.05	.28	-.06	-.03	.27	-.04
Main effects									
Paglis & Green's LSE				.40	.41	.34	.05	.45	.04
Posttraining small group LSE							.76	.50	.50
F			.21			.58			1.19
R^2			.02			.10			.26
Adjusted R^2			-.07			-.07			.04
ΔR^2			.02			.08			.17

Note. N = 14. LSE = leadership self-efficacy. * p < .05.

Logistic regression was used to test Hypothesis 9(b) in the prediction of leader role acceptance. Similarly, pretraining small group leadership self-efficacy was entered in Step 1 as a constant, the leadership self-efficacy measure was entered in Step 2, and posttraining small group leadership self-efficacy was entered in Step 3. Results, presented in Table 14, show that neither the leadership self-efficacy measure (B = 4.56, odds ratio [OR] = 95.33, $p > .05$) nor posttraining small group leadership self-efficacy significantly predicted the likelihood to accept a leadership role (B = 4.03, odds ratio [OR] = 55.29, $p > .05$). The results indicated that small group leadership self-efficacy did

Table 14
Logistic Regression for the Incremental Validity of Small Group Leadership Self-Efficacy over Paglis and Green's (2002) Leadership Self-Efficacy in the Likelihood to Accept a Leadership Role

	Leadership Role Acceptance								
	Model 1			Model 2			Model 3		
Variables	*B*	*SE*	*OR*	*B*	*SE*	*OR*	*B*	*SE*	*OR*
Control									
Pretraining SGLSE	.95	1.61	2.59	-.45	2.01	.64	.78	2.78	2.19
Main effects									
Paglis & Green LSE				4.56	3.82	95.33	2.77	4.72	15.88
Posttraining SGLSE							4.03	3.56	55.29
-2 Log likelihood			11.15			9.43			7.08
Model χ^2 (df)			.33			2.05			4.40
H-L Test			12.93			11.73			11.59
Nagelkerke R^2			.042			.24			.48

Note. N = 14. SGLSE = small group leadership self-efficacy; LSE = leadership self-efficacy; B = unstandardized logistic regression coefficients; SE = standard error of the coefficient. OR = odds ratio; H-L= Hosmer–Lemeshow goodness of fit test. * $p < .05$.

not provide significant additional variance over and beyond Paglis and Green's (2002) leadership self-efficacy measure in the likelihood to accept a leader role (Wald $\chi^2_{[1]} = 1.27$, $p > .05$). However, it is worth noting that the trend in the overall percentage accounted for each variable after being entered into the model increased (from 85.7% to 92.9%) only when posttraining small group leadership self-efficacy was entered into the equation.

In testing Hypothesis 10(a), pretraining small group leadership self-efficacy was entered in Step 1, generic self-efficacy was entered in Step 2, and posttraining small group leadership self-efficacy was entered in Step 3. The results, presented in Table 15, show that although generic self-efficacy ($\beta = .59$, $p < .05$) significantly predicted leadership behavior, posttraining small group leadership self-efficacy was not significant when added to the model ($\beta = .18$, $p > .05$). After accounting for variance in generic self-efficacy, small group leadership self-efficacy did not further provide additional variance in the prediction of leadership behavior, $\Delta R^2 = .02$, $p > .05$. It is worthy of note that although this relationship was not significant, the trend in the ΔR^2 was consistently larger for posttraining small group leadership self-efficacy even when it was entered into the regression model before generic self-efficacy.

Logistic regression was used to test the Hypothesis 10(b) in the prediction of leadership role acceptance. Similarly, pretraining small group leadership self-efficacy was entered in Step 1, generic self-efficacy was entered in Step 2, and posttraining small group leadership self-efficacy was entered in Step 3. Results shows that neither generic

Table 15

Hierarchical Regression for the Incremental Validity of Small Group Leadership Self-Efficacy over Generic Self-Efficacy in the Prediction of Leadership Behavior

Variables	Leadership Behavior								
	Model 1			Model 2			Model 3		
	B	*SE*	β	*B*	*SE*	β	*B*	*SE*	β
Control									
Pretraining small group LSE	.11	.23	.13	.17	.20	.21	.12	.24	.14
Main effects									
Generic self-efficacy				.48	.20	.59*	.39	.29	.47
Posttraining small group LSE							.27	.56	.18
F			.21			3.04			1.96
R^2			.02			.56			.37
Adjusted R^2			-07			.24			.18
ΔR^2			.02			.34*			.02

Note. $N = 28$. LSE = leadership self-efficacy. * $p < .05$.

self-efficacy ($B = 1.14$, odds ratio [*OR*] = 3.11, $p > .05$) nor posttraining small group leadership self-efficacy significantly predicted the likelihood to accept a leadership role ($B = .95$, odds ratio [*OR*] = 2.58, $p > .05$). The result, presented in Table 16, indicated that small group leadership self-efficacy did not provide significant additional variance over and beyond generic self-efficacy in the likelihood to accept a leader role (Wald $\chi^2_{[1]} = .15$, $p > .05$).

With regards to the research question about whether the self-efficacy → performance relationship is stronger than the performance → self-efficacy relationship, Pearson's one-tailed correlation was computed. Different time points were used to account for directionality as posttraining self-efficacy (Time 2) and leadership behavior were used in the self-efficacy → performance relationship and previous leadership

Table 16

Logistic Regression for the Incremental Validity of Small Group Leadership Self-Efficacy over Generic Self-Efficacy in the Likelihood to Accept a Leadership Role

	Leadership Role Acceptance								
	Model 1			Model 2			Model 3		
Variables	*B*	*SE*	*OR*	*B*	*SE*	*OR*	*B*	*SE*	*OR*
Control									
Pretraining SGLSE	.85	.84	2.34	.44	1.03	1.55	.14	1.28	1.15
Main effects									
Generic self-efficacy				1.14	1.06	3.11	.63	1.68	1.88
SGLSE							.95	2.44	2.58
-2 Log likelihood			28.05			26.74			26.59
Model X^2 (df)			1.05			2.36			2.51
H-L Test			2.08			6.34			6.34
Nagelkerke R^2			.06			.13			.13

Note. $N = 28$. SGLSE = small group leadership self-efficacy; *B* = unstandardized logistic regression coefficients; SE = standard error of the coefficient. *OR* = odds ratio; H-L Test = Hosmer–Lemeshow goodness of fit test. * $p < .05$.

experience (Time 1) and pretraining self-efficacy (Time 2) were used in the performance → self-efficacy relationship. The result indicated that although the self-efficacy → performance relationship was significant ($r = .38$, $p < .05$, $N = 27$), the performance → self-efficacy relationship ($r = .13$, $p > .05$, $N = 170$) was not significant. The Fisher's *z*-test also showed that the difference in the correlations was not significant ($z = 1.23$, $p > .05$). However, the magnitude of the self-efficacy → performance order also alludes to that order being stronger than the performance → self-efficacy relationship.

CHAPTER IV

DISCUSSION AND CONCLUSION

Given the significant amount of money that organizations invest annually in leadership training (O'Leonard & Krider, 2014), it seems appropriate to give individual differences relating to leadership effectiveness their due attention and to design high-quality measures to assess them. One such individual difference is leadership self-efficacy and although research of this construct is relatively recent, impressive strides have been made and a burgeoning literature exists. However, to date, the effect of group size on leadership self-efficacy has not been examined which contributes to a limited understanding of the impact of this contextual factor on leadership self-efficacy.

The present study sought to advance the group size/leadership self-efficacy research initiated in Asenuga (2012) by further examining the psychometric properties of, and validating a new measure of small group leadership self-efficacy developed by Asenuga (2012). A content valid 23-item small group leadership self-efficacy measure, consisting of both initiating structure (measured with 12 items) and consideration (measured with 11 items) was administered to 1,424 participants along with other subsidiary measures. This section summarizes the results of this study, provides a discussion of implications for research and practice, identifies limitations, and offers recommendations for future research.

Summary of Results

The psychometric properties of the small group leadership self-efficacy measure obtained from the present study are promising. In addition to construct-related validity, data analyses also examined evidence for criterion-related and incremental validities. First, results of the CFA indicated that the proposed hierarchical two-factor structure of the small group leadership self-efficacy measure provided an acceptable fit to the data, thus, supporting the notion that the latent construct of small group leadership self-efficacy captured two dimensions, namely initiating structure and consideration. It is important to note that this pattern of results is consistent with that found in Asenuga (2012) and provides cross-validation evidence for the measure.

Second, the construct-related validity of the measure was tested. To assess convergent validity, the small group leadership self-efficacy was correlated with the Paglis and Green (2002) leadership self-efficacy measure and the generic self-efficacy measure and it was found to converge with both measures. Thus, evidence of convergent validity was attained. With regards to discriminant validity, there was a partial support for the relationship between small group leadership self-efficacy and continuance commitment ($r = .16$, $p < .01$ at Time 1 and $r = -.01$, $p > .05$ at Time 2), however, the relationship with hedonism was not supported ($r = .11$, $p < .01$ at Time 1 and $r = .18$, $p < .01$ at Time 2). While the correlation with hedonism was weak, the positive direction of the correlation was unexpected because an inverse relationship was proposed. This relationship may have been found because participants were confused as the commitment items were in reference to an organization and not a small group. Taken

together, the weak effect sizes for both continuance commitment and hedonism as well as the discriminant test (Fornell & Larcker, 1981) result gives evidence that small group leadership self-efficacy is empirically distinct from both constructs.

Third, data analyses sought to demonstrate the predictive or criterion-related validity of small group leadership self-efficacy with three criteria—posttraining score gains, leadership behavior, and leadership role acceptance. However, only the posttraining score gain hypothesis was significant, thus providing partial support for criterion-related validity. Although this lack of predictive validity for leadership behavior may appear concerning on the surface, low statistical power (.56) due to only a few participants having complete data may be to blame. It is also worthy of mention that even with the low statistical power, the nonsignificant correlations were, at the very least, in the proposed direction. Furthermore, the use of a measurement approach that required a binary response for the willingness to accept a leadership role question, rather than a likelihood estimate that is characteristic of a scalar measure, may have made it more difficult to detect the nuanced effects of small group leadership self-efficacy for those participants who were willing to accept the leadership role in the vignette.

The present study also sought to examine the effect of training length as a moderator of the predictive validity of the measure. However, the hypothesis could not be examined as originally conjectured because there was no training length variability for the participants who had complete data. Although supplemental analysis of the effect of an alternate moderator variable, training objective, was conducted, the results were not significant. This outcome was not surprising because it has been established that it is

difficult to detect interaction effects with small sample sizes. Although the low statistical power (i.e., .50 for a sample of 28) to detect a small to moderate effect makes it impossible to make an emphatic statement about the criterion-related validity of the small group leadership self-efficacy construct, overall, partial support for criterion-related validity is concluded because the posttraining score gains hypothesis was supported ($t[260] = 6.48$, $p < .001$, $d = 0.36$), and the correlation for leadership behavior was in the right direction ($r = .40$, $p > .05$).

Fourth, the incremental contribution of this new measure over and beyond both the Paglis and Green (2002) measure of leadership self-efficacy and the generic self-efficacy measure was examined. Again, the correlations were not significant and a low power of .37 may be to blame as very few participants had criterion data ($n = 27$). However, in spite of the low statistical power the change in R^2 when comparing the predictive ability of the small group leadership self-efficacy with the other constructs were in the proposed direction. Finally, the present study sought to contribute to the ongoing controversy about the self-efficacy ↔ performance order of prediction (Lindsley, Brass, & Thomas, 1995; Sitzman & Yeo, 2013) and found support for a stronger effect of the self-efficacy → performance relationship.

Although an adequate number of participants with criteria data limited the ability of the present study to be conclusive about certain measure-related validities, there were other hypotheses that performed as proposed. The present study's use of a multiple group design is a strength as it likely ensured that the derived factor structure is not simply an artifact of the data collection method or the sample. Furthermore, that data

were collected from two sources, trainees and nominated colleagues, also helped to minimize common-source bias as an explanation of the relationship between small group leadership self-efficacy and the outcomes.

In sum, the results hold some promise for the small group leadership self-efficacy construct as a predictor of training program effectiveness ($t[260] = 6.48$, $p < .001$, $d = 0.36$), and present an initial or preliminary validity evidence for the small group leadership self-efficacy measure and its nomological network. Although the small group leadership self-efficacy construct, as measured in the present study, is highly similar to the Paglis and Green's (2002) leadership self-efficacy construct, it is posited that the source of this high similarity is inherent in the *measurement* inadequacies for the small group leadership self-efficacy construct, as discussed in the limitation section. The theoretical grounding and conceptual soundness of the small group leadership self-efficacy construct further support this position. Thus, it can be stated that although the measure has some potential for future use, further examination and refinement is clearly required.

Implications

Consonant with a recent call (Brawley & Pury, 2017) regarding the need for organizational researchers to expand research to include small, but largely prevalent, microbusinesses (i.e., small groups of nine or fewer individuals), the present study contributes to extant scientific literature and practice by emphasizing group size. With regards to scientific implications, the results of the present study provide partial empirical support for the introduction of a small group leadership self-efficacy construct

and measure to the scientific field. This is because the development and validation of this new measure adhered to proper scale development and validation guidelines and provides a groundwork to facilitate future quantitative research on issues relating to group size and leadership self-efficacy. The embedding of the small group leadership self-efficacy construct in broader theories, namely social cognitive theory, LMX theory, role theory, and contingency theory, as well as the incorporation of other theoretically grounded constructs (e.g., leadership effectiveness) expands the conceptual understanding of leadership self-efficacy, group dynamics, and the directionality of the self-efficacy ↔ performance relationship.

The confirmation of the Ohio-State leadership studies' initiating structure and consideration factors evident in the model fit index of the two-factor small group leadership self-efficacy serves as another scientific contribution. This is particularly interesting because conceptual and methodological criticisms earlier contributed to the two traditional leadership behaviors being "forgotten" as researchers disregarded them and focused their attention instead on contemporary leadership theories like transactional and transformational leadership. It is also noteworthy that the empirical support for, and the replication of, initiating structure and consideration in the present study specific to leadership self-efficacy in small groups or teams has a parsimonious appeal and is indicative of how deeply engrained these behaviors are, especially because the majority of previous research examining the behaviors failed to make a group-size distinction. This may also support the notion that leadership theories such as the Ohio-State are

examples of consistent “best-practice” models as they cut across multiple leadership roles (Yukl, 2013).

This research endeavor serves as a catalyst for future deliberations and research related to the importance of group size on self-efficacy and leadership outcomes. This is similar to recent arguments in the global leadership literature that seek to refine the global leadership construct by arguing for additional competencies needed by global leaders in comparison to domestic and international leaders (e.g., Bird & Mendenhall, 2016; Mendenhall, Reiche, Bird, & Osland, 2012). Scholars argue that the complexities related to a global leader’s role are so unique to that position that different and additional kinds of competencies or behaviors are needed for a global leader to be successful in that role. These are competencies that are not critical at the domestic or international leadership level. Relatedly, the present study further highlights group size as a context factor that contributes to the outcomes in a small group or a large group context differentially. Thus, just as group or team size has been found to impact the benefits of team training in terms of improved performance (Salas et al., 2008), its effect on leadership outcomes cannot be overemphasized.

The small group leadership self-efficacy construct provides a meaningful and substantive contribution to the literature by demonstrating preliminary support for construct-related and criterion-related validities; thus, furthering the ability to predict leadership effectiveness as researchers have become more interested in the contemporary leadership behaviors that result in effective leadership behaviors. Additionally, the

narrowness and specificity of the measure is anticipated to provide a useful assessment tool for scholars who are interested in examining the construct in the future.

Concerning applied implications, the refined measure has the potential to be used for leadership career or succession planning and leadership training design whereby the measure would distinguish employees high on small group leadership self-efficacy from those who are not. The former employees may later advance in their leadership careers when they are considered for a leadership position. On the other hand, a recognition of a low small group leadership self-efficacy in the latter group of employees may signal a need for leadership training. This training could also be targeted towards developing employees in areas where their small group leadership self-efficacy is the weakest.

Once the training is set in motion, the refined measure could then be used to periodically assess the leadership progress of trainees enrolled in leadership programs and assess the effectiveness of the training. Because organizations are cognizant of ensuring that a measure that best fits the training outcome is utilized, the small group leadership self-efficacy is especially expected to have practical utility when the training outcome is to improve small group leadership self-efficacy. This is also consistent with the guideline recommended for training evaluation that measures used to assess a specific training outcome be aligned with the objectives of the training program (Noe, 2017). Given the significant pretraining and posttraining differences found in the present study, inferences about a training program's effectiveness in achieving the objectives can be made.

Teams or small groups are ubiquitous in today's organizations as about half of U.S. organizations use different forms of teams (Devine, Clayton, Philips, Dunford, & Melner, 1999). Hence, the literature on team training, team leadership, and team leader training have been substantial and have reported that these three are viable methods organizations use to enhance team outcomes. Organizations invest a great deal of resources to design tailored intervention programs that meet the needs of their ever increasing small work groups or teams. The refined small group leadership self-efficacy measure could then ensure that the gains reaped from such resource investments are quantifiable. Because the measure is designed for application in a small group or team, its usefulness would be fitting during the team-based needs analysis phase to determine the team members who are specifically in need of training and during the effectiveness evaluation phase. Hence, the present study advances the conversation initiated by Asenuga (2012) through an empirical endeavor that ensures that organizations would have the needed measures to assess the attainment of their team training and leader training objectives and ensure that the utility of team training is fully realized. This would contribute towards team member development, and consequently, team performance.

Limitations and Future Research Directions

Similar to any research study, some limitations were identified during the course of the present study and it is important that these be considered and/or addressed in future investigations of small group leadership self-efficacy. The issues pertained to the

lack of incremental contribution of the proposed measure, research design, and sample issues. Each of these is discussed in detail.

There was a lack of clear discrimination between small group leadership self-efficacy and Paglis and Green's (2002) leadership self-efficacy measure as there was no significant finding for incremental validity. This is problematic because although the theoretical and conceptual difference between the two constructs is clear, one is unable to conclude that this is not a case of putting "old wine in new bottles" as the two constructs may only differ in their labels. It is, thus, difficult to establish that the small group leadership self-efficacy measure is not measuring the construct of leadership self-efficacy developed by Paglis and Green (2002). This is a shortcoming of this measure validation effort as research manuscripts relating to new measures are expected to add a significant value to the field.

Some artifactual explanations can be used to explicate this lack of incremental validity. First, in addition to careless responding, a failure to counterbalance the order of the measures in the survey may have caused the small group leadership self-efficacy to function similarly to Paglis and Green's (2002) leadership self-efficacy measure. Because the small group leadership self-efficacy items were presented before the Paglis and Green measure, participants may have responded to the items on the Paglis and Green measure while still thinking about small groups. This may have contributed to the correlation of the measure scores being superficially high. Therefore, in future studies, the measures should be counterbalanced or separated to determine if order introduces an error variance that affects the nature of participants' responses.

Second, common-method variance can further be used to explain the high correlation between both self-report measures (Podsakoff et al., 2003). Both measures likely share a significant amount of variance due to being completed with the same method and also because they are both attitudinal measures which have been reported to contain an average of 40.7% of method variance (Cote & Buckley, 1988). This is also true for the generic self-efficacy measure.

Third, because the majority of the participants (i.e., the Corps of Cadets) were enrolled in a peer leadership course while also a member of a small platoon in real life, this may have primed them towards leadership in a small group such that they were unable to perceive the differences in the items on both measures. In sum, given that two constructs can be very strongly correlated and yet have different patterns of correlations with other constructs (McCornack, 1956), future studies should examine additional antecedents and outcomes of leadership and compare the pattern of associations for both measures. Future studies may also utilize independent judges to sort Paglis and Green's (2002) leadership self-efficacy measure into initiating structure and consideration categories and compare its model fit to that of the small group leadership self-efficacy measure.

In retrospect, the omission of the Leader Behavior Description Questionnaire (LBDQ) from the present study may have been a major limitation. As an established and widely recognized measure that captures both initiating structure and consideration, consequently, its omission from the present study makes it difficult to be conclusive about the construct-related validity of the small group leadership self-efficacy measure

scores. In view of this, future research on the small group leadership self-efficacy measure should include the LBDQ to not only examine construct-related validity, but also examine whether the small group leadership self-efficacy measure predicts important leadership outcomes above and beyond the LBDQ in a small group setting.

Training generally increases self-efficacy (Noe, 2017), and a higher posttraining small group leadership self-efficacy as found in the present study ($t[260] = 6.48$, $p < .001$, $d = 0.36$) may be concluded as evidence of training effectiveness. Although the use of a pretraining/posttraining design in the present study served to minimize threats to internal validity, the absence of a training needs analysis or a comparison group makes it difficult to confidently attribute the increase in small group leadership self-efficacy to the training program and rule out other factors as explanations for changes. Perhaps no learning attributable to the training program occurred at all. Hence, future research or application would benefit from including a comparison or control group in the design.

Another limitation has to do with sample composition and insufficient sample size or data for the leadership behavior construct. Although all participants were enrolled in some form of leadership training, they were composed of mostly students who did not have actual leadership experience in an organization. The participants were also predominantly male with a mean age of 21 ($SD = 5.26$). This sample composition does not reflect the greater population of small group leaders in organizations. This limits the population validity of the study especially given that the construct at hand is leadership. Consequently, future studies in this area should be aimed at examining the proposed hypotheses using a diverse group of research participants in organizational leadership

roles or settings. Stable results across samples would add to the understanding of small group leadership self-efficacy and establish the measurement invariance and utility of the measure. With regards to insufficient leadership behavior data, the small sample size limited the interpretability of the effect size estimates due to a low statistical power of .56, as such, conclusions about both incremental and criterion-related validity are limited. This is not surprising given that participant attrition is one issue that predominates longitudinal studies (Nakai & Ke, 2011), such as the present study. This is a serious concern and future research should seek to ensure that the sample size is sufficient to detect small to moderate effects, if they exist.

Yet another limitation that warrants attention is group size and group composition because it was established earlier that large groups typically operate in functionally different ways compared with small groups (Hoegl, 2005). The fact that the present study did not collect pertinent group data (namely group size, follower composition, and task complexity) is counterintuitive, especially because the measure was developed specifically for use in small groups. Thus, it is unclear whether the improvement in small group leadership self-efficacy score would replicate irrespective of group size, follower composition, or task complexity. That is, do these conditions determine the extent to which small group leadership self-efficacy will be manifested? Just like one would expect the job an introverted individual chooses to differ from that of an extrovert, it would be interesting to examine the comparative or differential validity of the small group leadership self-efficacy measure in small and large group contexts, with experienced and inexperienced followers (e.g., PhDs versus undergrads), and in

complex and routine tasks characterizing either an action team or a service team (e.g., going to war versus fund-raising). It would also be informative to investigate whether there exists a maximum "small group" size (e.g., 3, 5, 7, 9) where the measure stops adding value.

In sum, the prospects for the continued growth in scholarly attention to the small group leadership self-efficacy construct will depend on further methodological development of the measure.

Conclusion

This dissertation answers the calls for theoretically integrative research that contributes to leader development, searches for contingencies in order to improve leadership outcomes, and develops measures that capture constructs central to group processes (e.g., Avolio, 2007). Hence, the present study offers an empirical test of a measure that integrates group size into a measure of leadership self-efficacy in order to gain a full understanding of leadership development and effectiveness. It does this by investigating the validity of the small group leadership self-efficacy measure (Asenuga, 2012). Although there were some unforeseen and potentially problematic results that could invalidate the measure, in general, the results indicate that the measure is related to alternative measures, is somewhat distinguishable from theoretically distinct measures, and has a potential to be used to evaluate training effectiveness.

Taken together, the results hold some promise for the small group leadership self-efficacy construct as a predictor of training program effectiveness ($t[260] = 6.48$, $p < .001$, $d = 0.36$) and contributes to the theoretical understanding of it. Although the

small group leadership self-efficacy measure is grounded in theory and holds much intuitive appeal, it is highly similar to the Paglis and Green's (2002) leadership self-efficacy measure. Because measure development and validity assessment is an ongoing process rather than a single event (Wright et al., 2017), the measure may benefit from a critical reappraisal and improved rigor in measure development and research design. This would contribute towards a refined and better measure which is important for clarifying the small group leadership self-efficacy/leadership behavior relationship, and for improving the measure's potential for use in the future.

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APPENDIX A

SMALL GROUP LEADERSHIP SELF-EFFICACY MEASURE

Instructions: The purpose of this measure is to assess your confidence in your ability to perform certain leadership tasks in small groups. For the purposes of this measure, a small group is defined as either a work, volunteer, or family group. Because it is a personal opinion of yourself, there are no right answers.

Please rate your ***confidence*** in your capabilities to perform each of the following tasks ***as of now***, recording in the blank space provided a number from 1 to 5 using the scale below.

We encourage you to take this seriously, because the information will assist in the development of a measure that will be used in programs designed to help people succeed in important leadership situations.

①	②	③	④	⑤
Not Confident at all		**Moderately Confident**		**Very Confident**

1. Express clearly what you expect from each member of your group.	① ② ③ ④ ⑤
2. Run group meetings efficiently.	① ② ③ ④ ⑤
3. Help individual group members develop action plans for improving their performance.	① ② ③ ④ ⑤
4. Help organize your group's decision-making process so that good quality decisions are made.	① ② ③ ④ ⑤
5. Have a clear purpose and set of objectives for each group meeting.	① ② ③ ④ ⑤
6. Help your group set measurable goals for any project they are assigned to complete.	① ② ③ ④ ⑤
7. Set and enforce high standards of performance in your group.	① ② ③ ④ ⑤
8. Determine the most critical areas for making improvements in your group's effectiveness.	① ② ③ ④ ⑤
9. Develop a good plan for improving your group's performance, if needed.	① ② ③ ④ ⑤
10. Develop ways for keeping track of individual and group performance.	① ② ③ ④ ⑤

11. Analyze information about your group's performance to determine how things are going.	① ② ③ ④ ⑤
12. Figure out an overall strategy that will help your group accomplish its task.	① ② ③ ④ ⑤
13. Build a sense of togetherness among group members.	① ② ③ ④ ⑤
14. Promote an atmosphere of mutual trust in your group.	① ② ③ ④ ⑤
15. Build the confidence of group members.	① ② ③ ④ ⑤
16. Help others feel comfortable being part of your group.	① ② ③ ④ ⑤
17. Create an emotionally safe climate for group members to openly discuss any issue related to your group's success.	① ② ③ ④ ⑤
18. Maintaining group harmony.	① ② ③ ④ ⑤
19. Make sure each member feels included in your group.	① ② ③ ④ ⑤
20. Make others feel good to be around you.	① ② ③ ④ ⑤
21. Be friendly and approachable.	① ② ③ ④ ⑤
22. Show kindness and warmth towards others.	① ② ③ ④ ⑤
23. Act in ways that cause others to like you.	① ② ③ ④ ⑤

APPENDIX B

PAGLIS AND GREEN'S (2002) LEADERSHIP SELF-EFFICACY MEASURE

Instructions: Please rate your confidence in your ability to perform each of the following tasks. In these items, "group" refers to either a work, volunteer, or family group.

Rate your confidence level by selecting one number on the 5-point scale. For example, 1 reflects not at all confident, 3 reflects an intermediate level of confidence, and 5 means completely confident.

①	②	③	④	⑤
Not at all Confident		**Moderately Confident**		**Very Confident**

1. I can figure out the best direction for where my group needs to go in the future.	① ② ③ ④ ⑤
2. I can identify the most critical areas for making meaningful improvements in my group's effectiveness.	① ② ③ ④ ⑤
3. I can develop plans for change that will take my group in important new directions.	① ② ③ ④ ⑤
4. I see the path my group needs to take in order to significantly improve our effectiveness.	① ② ③ ④ ⑤
5. I can develop trusting relationships with my group members such that they will embrace change goals with me.	① ② ③ ④ ⑤
6. I can obtain the genuine support of my group members for new initiatives in the group.	① ② ③ ④ ⑤
7. I can develop relationships with my group members that will motivate them to give their best efforts at continuous improvement.	① ② ③ ④ ⑤
8. I can gain my group members' commitment to new goals.	① ② ③ ④ ⑤
9. I can figure out ways for overcoming resistance to change from others whose cooperation we need to improve things.	① ② ③ ④ ⑤
10. I can figure out ways for my group to solve any policy or procedural problems hindering our change efforts.	① ② ③ ④ ⑤
11. I can work with my group members to overcome any resource limitations hindering our efforts at moving the group forward.	① ② ③ ④ ⑤
12. I can find the needed supporters in management to back our change efforts.	① ② ③ ④ ⑤

APPENDIX C

GENERIC SELF-EFFICACY MEASURE BASED ON BANDURA'S (1997)

GUIDELINES

Instructions: Please read each of the statements listed below and mark the response that best indicates the extent to which you agree with each statement:

①	②	③	④	⑤
Not at all Confident		**Moderately Confident**		**Very Confident**

1. I feel confident in my ability to perform effectively as a small group leader.	① ② ③ ④ ⑤
2. I can facilitate the accomplishment of group goals.	① ② ③ ④ ⑤
3. I feel confident in my ability to appear as a confident and competent leader to group members.	① ② ③ ④ ⑤
4. I can foster close interpersonal relationship and harmony within the group.	① ② ③ ④ ⑤
5. I feel confident in my ability to promote the group in its embedded environment and prevent it from unnecessary demands.	① ② ③ ④ ⑤
6. I can identify problems within the group and act accordingly.	① ② ③ ④ ⑤

APPENDIX D

HEDONISM

Instructions: For each question below, please choose how much like you the person is using the scale provided.

①	②	③	④	⑤	⑥
Not like me at all	**Not like me**	**A little like me**	**Somewhat like me**	**Like me**	**Very much like me**

1. He seeks every chance he can to have fun. It is important to him to do things that give him pleasure.	①②③④⑤⑥
2. Having a good time is important to him. He likes to "spoil" himself.	①②③④⑤⑥

APPENDIX E

CONTINUANCE COMMITMENT

Instructions: Listed below is a series of statements that represent feelings that individuals might have about the company or organization of which they are a part of. With respect to your feelings regarding the Corps of Cadets, please indicate the degree of your agreement or disagreement with each statement by selecting a number from 1 to 7 using the scale below.

① **Strongly disagree**	② **Disagree**	③ **Slightly disagree**	④ **Undecided**	⑤ **Slightly agree**	⑥ **Agree**	⑦ **Strongly Agree**

It would be very hard for me to leave my organization right now, even if I wanted to.	①②③④⑤⑥⑦
Too much of my life would be disrupted if I decided I wanted to leave my organization now.	①②③④⑤⑥⑦
I feel that I have too few options to consider leaving this organization right now.	①②③④⑤⑥⑦

APPENDIX F

EMAIL SENT TO PARTICIPANTS' NOMINATED COLLEAGUE

From: bisiasenuga@tamu.edu
To: [Nominated colleague's email address that the participant provided in the "Initial Survey"]
Subject: [Participant's first name and last initial**]** has asked you to participate in the Small Group Leadership study being conducted at Texas A&M University.

Greetings!

Your colleague, [participant's first name and last initial], volunteered to participate in a small group leadership study at Texas A&M University. As part of this study, s/he has requested that you fill out a short survey about him/her. Below you will find a link to the "Colleague" survey hosted on Qualtrics.com. The survey itself will take less than 5 minutes to complete.

To access the survey, please click on the link below or copy and paste the web address into your web browser: [Qualtrics Survey Link]. The password is: leadership.

Participation in this study is strictly voluntary and you can discontinue participation at any time. There will be no penalty if you choose not to participate. Your colleague will not see your answers. Your responses will not be tracked to you as an individual or to your workgroup.

Thank you in advance for your participation, it is greatly appreciated. Feel free to contact me or the principal investigator, Winfred Arthur (w-arthur@tamu.edu), if you have any questions.

Olabisi Atoba
Department of Psychology
Texas A&M University
4235 TAMU
College Station, TX 77843
bisiasenuga@tamu.edu

APPENDIX G

LEADERSHIP EFFECTIVENESS MEASURE

Instructions: With regard to the referenced colleague, please read each of the statements listed below and mark the response that best indicates the extent to which you agree with each statement:

① **Strongly Disagree**	② **Disagree**	③ **Neither Agree nor Disagree**	④ **Agree**	⑤ **Strongly Agree**

1. This group leader is an excellent leader.	① ② ③ ④ ⑤
2. This group leader is very effective.	① ② ③ ④ ⑤
3. This group leader leads the group in a way which motivates the members.	① ② ③ ④ ⑤
4. I like working together with this group leader.	① ② ③ ④ ⑤
5. This group leader is a good team leader.	① ② ③ ④ ⑤
6. This leader will be successful in future tasks.	① ② ③ ④ ⑤

APPENDIX H

SELF NOMINATION FOR A LEADERSHIP ROLE VIGNETTE

Situation:

Imagine you have already graduated and have been working for three years. Now imagine that your boss has asked you if you would be interested in taking on the task of leading a group of your co-workers who have been assigned to an important, high profile project for the organization. She assures you that you are under no obligation to accept this leadership assignment, and your prior experience with her tells you that she means what she says. Furthermore, she tells you that if you decide to take this assignment you will be relieved of some of your current duties to offset the demands of the new project.

From her description of the project, you realize that you understand the technical issues involved, so you have the necessary know-how. In addition, you already know some of the people who have been selected to participate in the project as group members.

Finally, your boss tells you that your performance as the group leader will be considered as part of your annual performance review. Given these circumstances, would you accept this leadership position?

Yes _____ No _____

APPENDIX I

PREVIOUS LEADERSHIP EXPERIENCE

Instructions: Do you have any PREVIOUS leadership experience? Here leadership experiences can include formal work groups (whether in a business or military setting) or volunteer groups (like church, clubs, service groups, college activities, etc.) or even a family group (like organizing a family reunion).

If yes, list your PREVIOUS leadership position(s), listing the most recent first.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

APPENDIX J

OVERVIEW OF MEASURE SCORES BY SEX

Overview of Measures Scores by Sex

	Male						Female					
	Time 1			Time 2			Time 1			Time 2		
Measure	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Previous leadership experience[a]	127	.87	0.33	18	.94	0.24	65	.91	0.29	11	.82	0.41
Small group LSE	817	3.95	0.64	216	4.11	0.56	203	4.05	0.62	61	4.40	0.47
a) Initiating structure	817	3.84	0.71	216	4.10	0.61	203	3.92	0.67	61	4.29	0.53
b) Consideration	817	4.06	0.73	216	4.13	0.62	203	4.20	0.73	61	4.52	0.56
Paglis and Green LSE	127	3.40	0.64	18	3.40	0.47	65	3.89	0.61	11	4.14	0.39
Generic self-efficacy	127	4.14	0.66	18	4.08	0.55	65	4.03	0.64	11	4.29	0.45
Hedonism	690	4.15	1.11	198	4.22	1.10	138	4.11	1.18	50	4.19	1.16
Continuance commitment	690	5.12	1.47	198	5.05	1.52	138	5.29	1.35	50	5.25	1.65
Leadership effectiveness	-	-	-	41	4.55	0.46	-	-	-	32	4.50	0.79
Leadership role acceptance	116	.97	0.16	18	.78	0.43	63	.95	0.22	11	.82	0.41

Note. LSE = leadership self-efficacy. [a] Leadership experience was coded 0 = no experience, 1 = experience